THE BUILDER

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ARCHITECTURE & THE BRITISH ARCHITECT

THE BUILDER HOUSE, CATHERINE STREET, ALDWYCH, LONDON, W.C.2. Telephones: Temple Bar 6251-2-3-4

VOL. CLXXXIV JUNE 12, 1953 No. 5756

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THIS WEEK'S NEWS

ARCHITECTURAL AND BUILDING STUDENTS are to study reconstruction work at Canterbury and Rochester Cathedrals. The suggestion has come from Mr. S. H. Loweth, FRIBA. Mr. Loweth is to retire from the post of Kent County Architect in March next. p. 900

DETAILS of two competitions held by the New Zealand Government have been announced. They are for a lower-cost family home and for ideas in economical housing construction. p. 901

"IF THE ARCHITECT is to play his proper role, he must be allowed to be a true partner at policy level [in industrial firms], and this implies a far closer relationship with industry than is attainable by the private architect to-day." This view was expressed by Mr. S. A. W. Johnson-Marshall to the British Architects' Conference which opened at Canterbury on Wednesday. p. 917

THE VIEW that to succeed in reducing the accident rate in the building industry required more than compliance with the building regulations was expressed by Mr. Peter Trench to the National Industrial Safety Conference. There was need for a three-pronged attack with the forces of management, specialists in accident prevention and organised labour. p. 925

THE SUGGESTION that new BEA power stations should be sited adjacent to areas suitable for the development of district heating schemes was described as "virtually impossible in practice" by speakers at the British Electrical Power Convention which opened at Torquay on Wednesday. p. 927

DETAILS of the London County Council's paint-testing system are described. The Council spends more than £1m. annually on its painting programme. p. 929

ADVICE to housing authorities to instruct contractors to make the maximum use of lime in mortar while cement shortages in some areas exist is given by the Ministry of Housing. p. 929

NEW RATING PROPOSALS

THE Valuation for Rating Bill, which received its second reading in the House of Commons just before Whitsun, deals with the assessment of dwelling-houses, private garages and premises used partly as private dwellings. It does not deal with any other type of building or hereditament. The purpose of the new Bill can best be understood by considering briefly the history of rating over the last 20 years. The last general valuation was made in 1933 and was carried out by the local assessment committees, the basis of assessment for nearly all types of building and hereditaments (including houses and private garages) being rental value. In 1937-38 local authorities carried out preliminary surveys for the preparation of new valuation lists to come into force in April, 1939. There were, however, widespread fears that the new valuation would cause hardship, particularly to the owners and occupiers of dwelling houses, and the Government accepted a recommendation by the Central Valuation Committee that the new valuation lists should be postponed until 1941. The Central Valuation Committee stated:

> "Among other contentions brought to our notice it is urged that in many areas the supply of houses (especially of houses available for letting) is still insufficient to meet the demand; that the rents now obtained for such houses as are available for letting are higher than would be the case if there were a normal relationship between supply and demand; and that consequently an application of the statutory definition of 'gross value' in present circumstances would result in such increases in existing assessments as would give rise to hardship among certain classes of ratepayers."

The war resulted in a further postponement, and it was not until 1948 that provision was made for new valuation lists in the Local Government Act of that year. The Act provided: that the new lists were to come into force in April, 1952 (with provision for postponement until 1953); that in order to secure uniformity in valuation the assessments were to be made by the Inland Revenue Department; and that there should be a completely new basis of valuation for private dwellings. Houses and flats built since 1918 by local authorities were to be assessed by reference to the hypothetical 1938 cost of construction and the hypothetical 1938 site cost. Houses built by private enterprise since 1918 were to be assessed on the basis of hypothetical 1938 cost of construction, but the site value was to be taken as in 1949. All other dwellings (and these included flats and maisonettes built by private enterprise since 1918, as well as houses built before that date) were to be assessed on a rental basis, but limited to 1939 values. The effect of the Act was to permit the assessment of business and commercial properties to rise in accordance with the increase in rents since the war, but to check possible increases in house assessments. In fact, a higher proportion of the burden of rates would in future be borne by commercial and business premises.

The task of revaluation was not completed in time to permit the new lists to come into force in 1953, and there has been a further postponement: the new lists for all types of buildings will not now come into force before 1955. In the meantime, the new Bill would abolish the hypothetical cost of construction plus site value as the basis of assessment for dwelling-houses built after 1918 and proposes to reintroduce the rental value basis for all types of dwellings. The rental value will, however, be taken as in 1939, although the condition of the locality (including amenities and transport facilities) is to be taken as at the present day. If it can be shown in any particular case that the 1939 rental value is greater than the current value, the latter is to apply.

There seems little doubt that the 1948 formulæ have not proved satisfactory. In the first place, there was the disparity of treatment between council houses and those built by private enterprise; in the former case the site was to be valued on 1939 figures, and in the latter on 1949 figures. Mr. Bevan,

in introducing the 1948 measure, admitted the disparity but suggested that it would not increase the rateable value of the privately built house by more than £2. But any disparity of treatment is unfair, and it is particularly unfair when the occupier of the privately built house is already called upon to subsidise the council tenant.

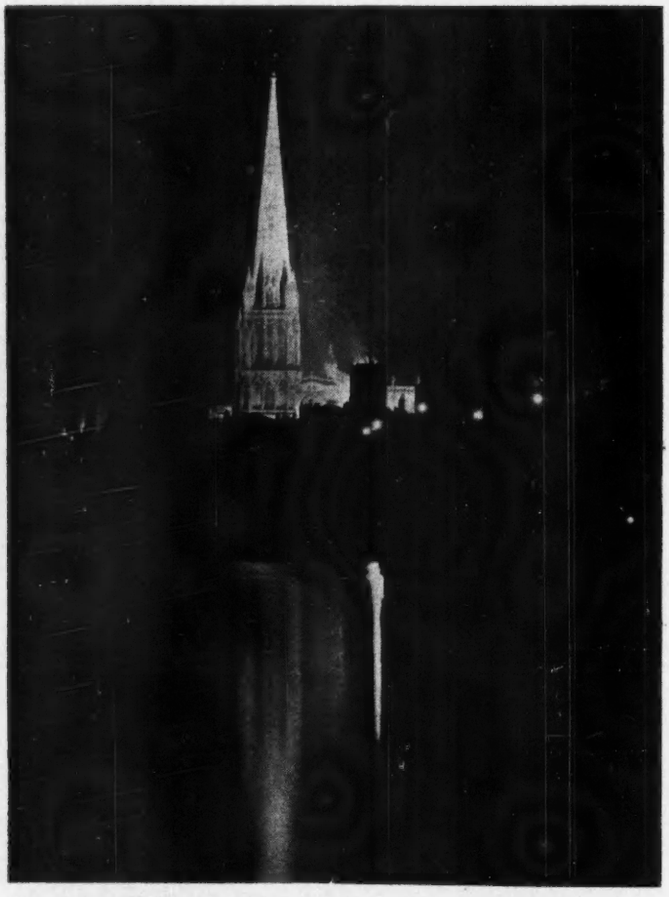
Even more serious is the disparity which appears to have arisen between the pre-1918 houses and those built since that date. Introducing the new Bill last month, Mr. Ernest Marples was able to quote cases in which the assessment of older houses had risen considerably, while the assessment of comparable houses built since 1918 had remained static. He referred, for instance, to two houses in the same area of London with comparable accommodation, both having existing rateable values of £22. Under the 1948 Act the newer house would remain at £22, while the older house would be increased to £35—an increase of nearly 60 per cent. on a house which could scarcely have the same amenities as the other. It appears from Mr. Marples' speech that there are cases in which the converse has happened, but (unless it can be shown that the older houses had been under-valued) it is odd that there should be any substantial number of cases in which the assessment of older houses should rise more than that of newer houses.

To this extent, therefore, the new proposals are an improvement on the 1948 formulæ. On the other hand, the new proposals will probably result in a substantial increase in dwelling-house assessments generally. It does not of course follow that increased assessments will result in an increased burden of rates; indeed, an increase in rateable values might be expected to result in a proportionate reduction in poundages. Moreover, when the new lists come into force a greatly increased share of the rateable value will be represented by commercial and business premises and (in spite of derating) by factories. But it must be borne in mind that local authorities generally are finding themselves short of money; even before the new valuation lists were postponed, the local authorities were pressing Mr. Macmillan to end the derating of industrial premises, and to permit the raising of revenue from new sources. An increase in rateable values is not likely to lead to a proportionate reduction in rate poundages, and the burden of rates is likely to be increased—possibly substantially.

Such an increase may cause a good deal of hardship, particularly if tenants have to pay higher rents, as they will almost certainly have to do when the Rent Acts are revised. Although wages are higher to-day than before the war, the fears of 1938 are just as relevant to-day as then, and it is by no means clear that the Government have done wisely in reverting to a position which then caused so much alarm. Moreover, the abandonment of the 1948 formulæ, while tending to greater uniformity of assessment as between houses in the same district, is likely to have the reverse effect as between different districts; there are good grounds for thinking that the housing shortage bears more hardly in some districts than in others, and that developments since 1939 will tend, if anything, to increase that disparity.

The criticism has also been made that the application of 1939 values to 1953 situations will be technically difficult. Certainly, the attempt to apply 1939 values to compensation under the 1944 Planning Act proved none too successful, and since then a great number of valuers have qualified who have no experience of pre-war values—a tendency that will obviously increase.

The new Bill perhaps represents the best that can be done for the moment, and it is high time that the new valuation lists came into force. But between now and the next quinquennial revaluation (if not sooner) the whole basis of local government finance must be carefully and courageously thought out.



ST. MARY REDCLIFF, BRISTOL, as floodlit. The spire was reconstructed by George Godwin, FRS, FRIBA, Editor of THE BUILDER, 1844-1883.

ARCHITECTURAL PROPAGANDA

CORPORATE publicity for the services the architect renders the community, though long frowned on in this country by the more conservative members of the profession, is now generally accepted as a useful development of our time. Nowhere has it been more successfully exploited than in the United States, as we are reminded by a "Facts Package," as it is rather whimsically referred to, just issued by the American Institute of Architects. Consisting of a number of top-hinged underlapping sheets, in form rather like a calendar, this is a collection of facts about the architect, his services, his profession and his national organisation, set forth under the relevant sectional key-lines of (1) The architect: his profession and training; (2) Nature of architect's work: its importance and its cost; (3) The architect's place in the community; (4) The AIA: objectives, history, organisation; (5) Officers: administrative, regional and chapter; and (6) The architect and better living.

Much the same sort of information was given, though less fully and with differing emphasis, in the booklet on "The Architect and His Work," issued by the RIBA a month or two ago, and the two productions make an interesting comparison for those who study the technique of professional publicity. Generally, the American production appears to be the more attractive and informative (if somewhat repetitive in some of its sections), the RIBA booklet the more convenient for handling and storage.

The AIA, like the RIBA, is noticeably reticent on the question of fees. All it has to say is that "As in any other profession, fees for architectural services vary, and depend on an architect's standing in his field, geographic location of office, size and kind of job to be done," though it is added, presumably

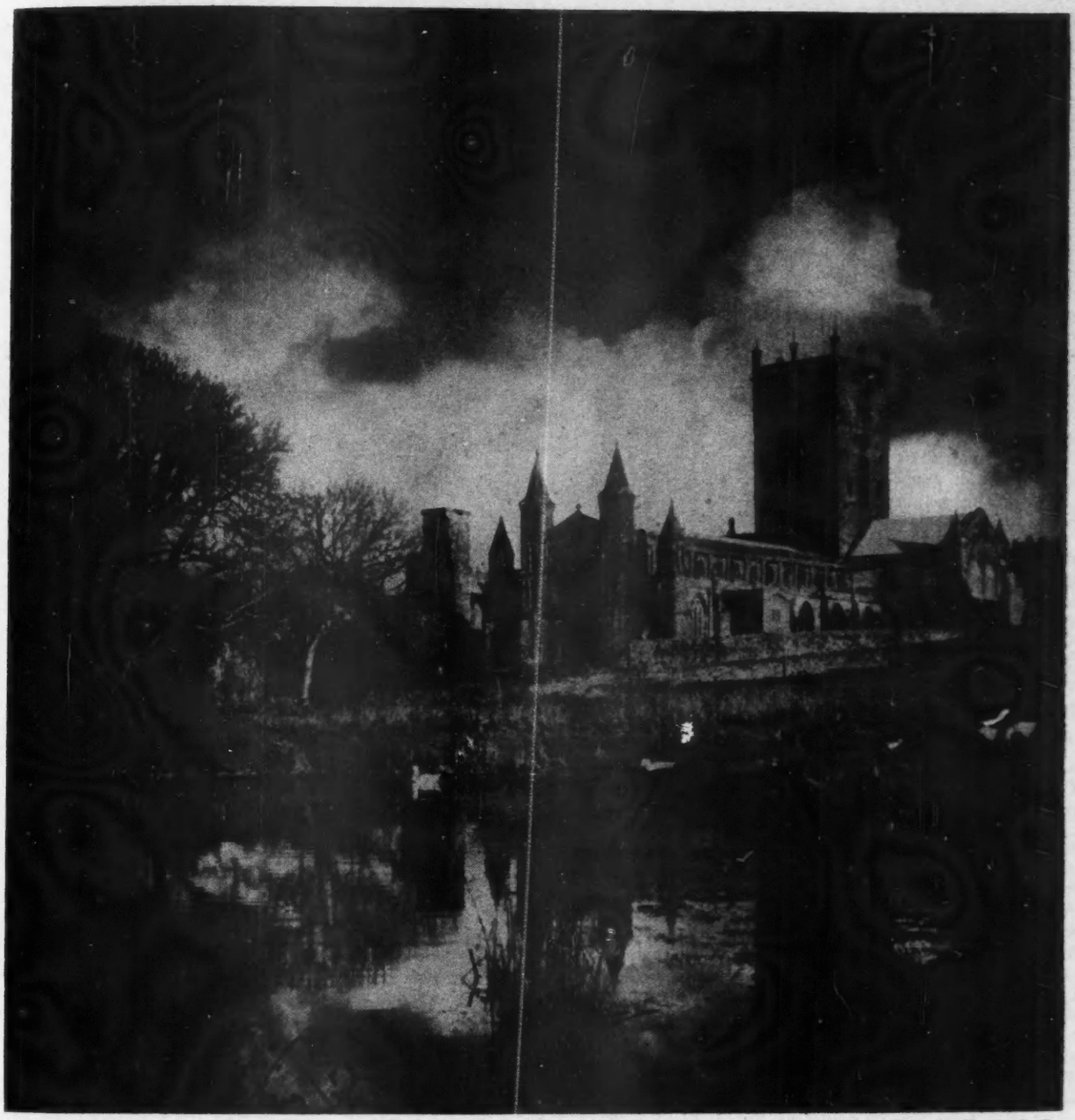


Photo by The Studio Jon

CATHEDRAL CLOSE, ST. DAVIDS: From the Coronation Exhibition of the Institute of British Photographers.

by way of reassurance and encouragement, that "an architect's fee often is less than the total of miscellaneous charges paid as part of the cost of a ready-made house; i.e., speculator's profit, commissions, financing charges and in some instances taxes, which may have accumulated before purchase."

Why this reticence about fees? Is it due to delicacy, or to a belief that such worldly information is better withheld until relations between architect and client are established? Whatever the reason, indefiniteness, we believe, is psychologically unsound, and must have the effect of deterring many would-be clients. After all, the labourer is worthy of his hire, and it is mere courtesy to give the prospective building owner an approximate idea of his commitments on the score of fees.

The American publication gives a good deal of information about the architectural profession of a kind not contained in the RIBA booklet. For example, it is interesting to read that there are approximately 7,000 architectural firms in the United States and that 70 per cent. of the profession are in private practice, 19 per cent. employed by other architects, and 5 per cent. classified as public employee architects. The remaining 6 per cent. are divided among teachers on architectural faculties and the miscellaneous group that includes architects in non-architectural work or those retired or unemployed. How different it is to-day in this country, where about half the profession is engaged on work promoted by some form of public authority.

Another respect in which the American publication differs from the British is in the complete list of administrative officers and directors given, both regional and headquarters, together with particulars of chapters and State organisations. Incidentally, a short history of the AIA records the interesting fact that the Octagon, Washington, DC, the national headquarters of the Institute, served at one time as the official residence of President Madison, who, in the tower room just above the entrance, signed the Treaty of Ghent, which determined lasting peace with Great Britain.

This pubilcation, the title of which is "Facts about Architecture and Architects," gives an excellent summary of the services the architect can render the community and must, we should think, make effective propaganda for the profession in the United States. No doubt it has already been conned with interest at Portland-place.

NOTES & NEWS

THE ABBEY RESPLENDENT

NOW that the Abbey and its Annexe are open to public view, it is clear that those architects and administrators at the Ministry of Works and the Earl Marshal's Office responsible for the design and furnishing of the building fully deserve the golden opinions already expressed. The severe limitations on colour, with emphasis on two shades of blue for the tapestry fronting the seating and for the rich pile carpet, relieved by the scarlet of the Royal chairs, makes the Abbey a triumphant example of how to achieve perfect dignity through simplicity. Mr. Eric Bedford's treatment of the Annexe is no less successful ; here the same blue carpeting combines with the broken-white walls and the pompeian red of the high ceiling to show contemporary decoration at its best. The lighting, both artificial and natural (the latter through the etched glass west wall) could hardly be bettered, and the retiring rooms are gay and conveniently planned. It seems a pity that this excellent building must be demolished but, its purpose served, the Annexe can hardly avoid that fate ; its designers may be very sure that it has set a standard of contemporary decorative treatment worthy of a great occasion.

LEARNING ABOUT MASONRY

MR. A. MOODY, ARCA, principal of the Canterbury College of Art, at the suggestion of Mr. Sidney H. Loweth, FSA, FRIBA, is to organise visits of architectural and building students to the restoration work in progress at Canterbury and Rochester Cathedrals. The respective architects in charge — Mr. Harold Anderson, FRIBA (Canterbury) and Mr. W. Emil Godfrey, BA(Oxon.), ARIBA— have undertaken to give lectures and to conduct the students over the works.

This scheme commends itself as being likely to promote interest in the masons' craft, and the example might well be followed at other notable stone buildings now being repaired. The Worshipful Company of Masons are co-operating by sending down London mason apprentices.

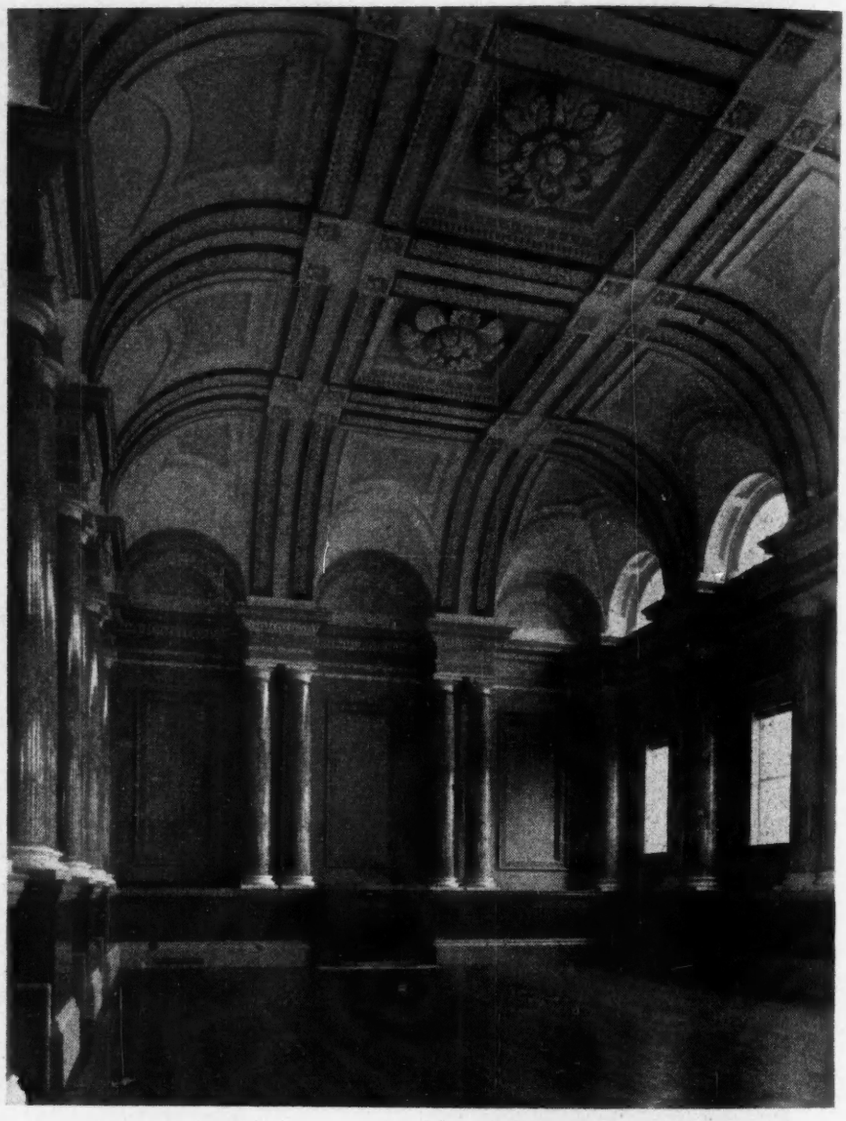
Mr. Loweth is to retire from the post of Kent County Architect on March 31 next.

A SPLENDID INTERIOR

" LONDON ON WHEELS " is the title of an interesting exhibition of London travel in the nineteenth century, organised by the British Transport Commission and now on view in the Shareholders' Meeting Room at Euston Station. Many who go to see it will probably be seeing for the first time one of the finest classical interiors of the nineteenth century. This Room forms part of the large rectangular building whose chief feature is the famous " Great Hall." The building was completed in 1849 to the designs of P. C. Hardwick (1822-92), son of Philip Hardwick, the architect of the Euston Portal.

The building, which commemorates the founding in 1846 of the London and North-Western Railway by the amalgamation of the London and Birmingham Railway with the Grand Junction and Manchester and Birmingham Railways, is to be preserved as an historical monument. The Shareholders' Meeting Room is approached along the long axis of the Great Hall, by way of a broad staircase and a landing, to which a screen of Ionic columns gives the appearance of a monumental portico. The Room itself is planned in five bays along its length and three across the width, the bays being divided by pairs of Roman Doric columns on pedestals. The ceiling, which is coved and pierced by lunettes, is divided into compartments by double bands of plaster enrichment with large foliated rosettes in the central coffers.

The new decorations which have just been completed represent an attempt to restore the Room to its original appearance. The finishes for the walls follow Hardwick's specification, which is preserved in the Commission's collection. So far as is known, no drawing survives showing the actual colours used, but a coloured perspective of the Coffee Room in Hardwick's G.W.R. Hotel at Paddington, now in the RIBA Library, shows similar finishes and has been useful in interpreting the written specification. We congratulate the Commission on throwing this splendid interior open to the public.



THE SHAREHOLDERS' MEETING ROOM, EUSTON STATION, which has recently been restored and is to be preserved as an historical monument (see note).

LTE CORONATION DECORATIONS

THE DECORATIONS which adorn the canopies of the London Transport stations (two examples of which were illustrated in our Coronation number of May 29) were designed and carried out for London Transport Executive by Mr. Jack Howe, ARIBA, FSIA.

A CORONATION SOUVENIR

ONE of the most attractive Coronation souvenirs we have seen is a tray designed for the British Aluminium Co., Ltd. Mr. John Bailey, MSIA, and Mr. James Hart, MSIA, submitted designs for the tray, that of Mr. Hart being chosen. Of 10 $\frac{3}{16}$ in. diameter, the tray is engraved with the formal monogram pattern recommended by the Council of Industrial Design. The metal is super-purity aluminium, burnished.

THE MODULAR SOCIETY

MR. C. H. ASLIN, CBE, FRIBA, County Architect, Hertfordshire, invites

fellow members of the Modular Society to visit Summerswood School, Furzehill-road, Boreham Wood, designed on a 40 in. grid, on June 18, at 8 p.m. Members of the architectural staff will attend to give short talks on the advantages and disadvantages of the 40 in. grid, the design of four-way junctions, tolerances and lessons learnt.

MAPS AND MAP-MAKING

AN EXHIBITION under the title of "Five Centuries of Maps and Map-Making" was opened by Field-Marshal the Earl Alexander of Tunis, Minister of Defence, on June 9, at the Royal Institution of Chartered Surveyors, 12, Great George-street, Westminster, SW1. The exhibition, which has been staged to mark the coronation of Her Majesty the Queen, Patron of the Institution, is open to the public until July 4. The 1,000 exhibits trace the history of map-making and accurate surveying from the beginning of the 16th century to the present day. One of the most outstanding exhibits is a "Prospect of the City of London" showing the destruction caused during the last war, drawn by Mr. Cecil Brown and dedicated to the citizens of London, which the artist has coloured specially for the exhibition since it was last on display.

DINNER TO M. FREYSSINET

ON MAY 14, M. Eugene Freyssinet received the honorary degree of Doctor of Science of Leeds University. The presentation was made by the Chancellor of the University, The Princess Royal.

To mark the occasion the Prestressed Concrete Development Group gave a dinner for M. Freyssinet in the evening in the University refectory. Mr. D. H. New, chairman of the Group, was in the chair.

The toast of M. Freyssinet was proposed by Sir Francis Meynell, Director of the Cement and Concrete Association. The toast of the other guests was proposed by Mr. New, who made particular mention of Mr. Hunter Rose of G. and T. Earle, Ltd., who had received an honorary degree of Master of Science, Mr. Granter, president of the Institution of Structural Engineers, and Professor R. H. Evans, Professor of Civil Engineering at Leeds University.

LONG, LONG TRAIL!

THE FIRST EXAMPLE of an immigrant arriving in Canada snail-like with his prefab house on his back has just been noted (writes our Ottawa correspondent). An ex-Army captain is putting up his house on the river bank 12 miles outside Ottawa. By so doing, he has helped himself over the ban on export of capital which prevents most immigrants buying a house on arrival, and the house is roomier than a comparable Canadian house.

SCHOLARSHIP AWARD

THE TRAVELLING SCHOLARSHIP offered by The Trussed Concrete Steel Co., Ltd., details of which were given in our issue of April 17, has been awarded to Mr. G. Graham, Dip.Arch., ARIBA, of Nottingham. Mr. Graham will be accompanied by Mr. P. B. Wood, B.Sc.Tech., of the company's staff, to whom a similar scholarship has been awarded.

ILLUMINATION IN THE U.S.

DR. WARD HARRISON, of Cleveland, Ohio, president of the International Commission on Illumination, who is making an official visit to Europe, lectured to the Illuminating Engineering Society on June 11 on lighting practice in the United States.

POST VACANT

THE North West Metropolitan Regional Hospital Board invite applications by June 30 for the post of Deputy Regional Architect. Salary £1,200 by £50 to £1,400, plus £50 London weighting. Details advertised elsewhere in this issue.

PROFESSIONAL ANNOUNCEMENTS

MESSRS. S. N. COOKE AND PARTNERS, FF&ARIBA, chartered architects, moved their offices on June 4, to 34, Harborne-road, Edgbaston, Birmingham 15. Tel.: Harborne 1151.

MR. G. J. JOLLY, FRIBA, and MR. R. G. GRANT, ARICS, announce that they have taken into partnership MR. H. R. STEWART HUNTER, ARIBA, and have opened a practice under the name of ERNEST J. THOMAS, JOLLY, GRANT AND HUNTER, at 11, Old Steyne, Brighton, where they will be pleased to receive trade catalogues.

MR. CYRIL J. HARRISON, ARICS, chartered quantity surveyor, has announced that the address of his practice is now 106, Jermyn-street, London, SW1. Tel.: Trafalgar 3066.

IN PARLIAMENT

Composition of the Howard Robertson Committee

ON June 9, MR. DODDS asked the Minister of Works if he would make a statement giving the names and organisations that represented all those appointed to the Committee to inquire into the method of tendering for contracts by building firms.

SIR DAVID ECCLES repeated the statement which he made on January 27, that this review of tendering and contract procedure had been undertaken by the industry itself under the leadership of the RIBA and he was not responsible for the appointments. He added that the Committee of Review initially consisted of representatives of the RIBA, RICS and the National Federation of Building Trades Employers. The names of the representatives on the Committee had been circulated.

In a supplementary question, MR. DODDS asked the Minister if there was not a place on this body for a trade union representative. It seemed as though all the vested interests were represented. Would the Minister not reconsider that suggestion?

SIR DAVID ECCLES: The matter for discussion is how to get prices for works; it is not how to manage contracts. As I have said before, the appointments are not my concern. I think that it was open to the trade unions to ask for membership. My information is that they did not do so.

FROM "THE BUILDER" OF 1853

Saturday, June 11, 1853

THE BRITISH INSTITUTION.—The exhibition of works by the old masters here is always one of the great treats of the year, and the present collection, with a small addition of works by deceased English painters, is inferior to few which have preceded it. Leonardo Da Vinci, Rubens, Murillo, Cuyp, Rembrandt, Both, Teniers, Wouwermans, Canaletto (singularly fine), and S. Rosa, are well represented; as, too, are Reynolds (why was his ugly caricature exhibited?), Wilkie, Collins, Constable, and Turner.

COMPETITION NEWS

Housing for New Zealand

THE NEW ZEALAND GOVERNMENT is offering cash prizes totalling £1,000 for the best design of a lower-cost family home and for ideas in housing construction which will lead to lower costs. Details of two competitions were announced recently by the acting Prime Minister, Mr. K. J. Holyoake. Prize money in the first competition totals £625 and in the second £375. Winning entries in both competitions will be used in the Government's housing drive.

The competitions are supported by the New Zealand Institute of Architects, but the field is open to all comers. The object of the competition is to produce a good standard family home at lower costs than those which now prevail. It is important to note that all designs submitted should conform to the New Zealand Standard Building Code, details of which are available at New Zealand House, Strand, London, who expect to have the conditions of the competitions.

The floor area is to be not less than 900 sq. ft., or approximately the area in a standard three-bedroom State house. The first prize will be £300, the second £150 and the third £75. There will also be four prizes of £25.

For the second competition, entries must incorporate some idea which will lead to greater economy or improved efficiency in housing construction, either within the existing standard building by-laws, or by a reasonable variation of them. A brief but adequate description of the proposal with a sketch drawing is required with the entry. First prize will be £100, the second £50 and the third £25. There will also be prizes of £10 for 20 runners-up. Closing date is July 21.

COMING EVENTS

SATURDAY, JUNE 13

COUNCIL FOR THE PRESERVATION OF RURAL ENGLAND (SHEFFIELD AND PEAK DISTRICT BRANCH).—Professor Sir Patrick Abercrombie on "The Green Belt and the Growing City." Longshaw House, near Sheffield. 4.15 p.m.

BUILDING TEACHERS' CONFERENCE.—Summer meeting. Hatfield Technical College. 11.15 a.m.

LONDON ASSOCIATION OF MASTER STONEMASONS.—Apprentices' examination. Nine Elms Stonemasonry Works. 112, Thessaly-road, Battersea, SW8. 3 p.m.

MONDAY, JUNE 15

RIBA.—Travelling exhibition, "Homes and Surroundings." Metropole Restaurant, Penrhyn-road, Colwyn Bay. Continuing until June 24.

MOW.—Exhibition of sketch models of "The Queen's Beasts," by Mr. James Woodford, OBE, RA. Hope House, 41-43, Great Peter-street, SW1. Weekdays 11 a.m.-5 p.m. Continuing until July 31.

NEWS CHRONICLE.—Exhibition of News Chronicle Competition house designs. Building Centre, Store-street, WC1.

SOCIETY OF WOMEN ARTISTS.—Exhibition of painting, sculpture and crafts. Royal Institute Galleries, 195, Piccadilly, W1. 10 a.m.-5 p.m. Continuing until June 29.

ASSOCIATION OF RURAL DISTRICT COUNCIL SURVEYORS.—Annual general meeting and conference. Town Hall, Torquay. 4.30 p.m.

WEDNESDAY, JUNE 17

WALLBOARD IMPORTERS', DISTRIBUTORS' AND MERCHANTS' ASSOCIATION OF THE UK.—General meeting. 3-4 Newgate-street, EC1. 2.30 p.m.

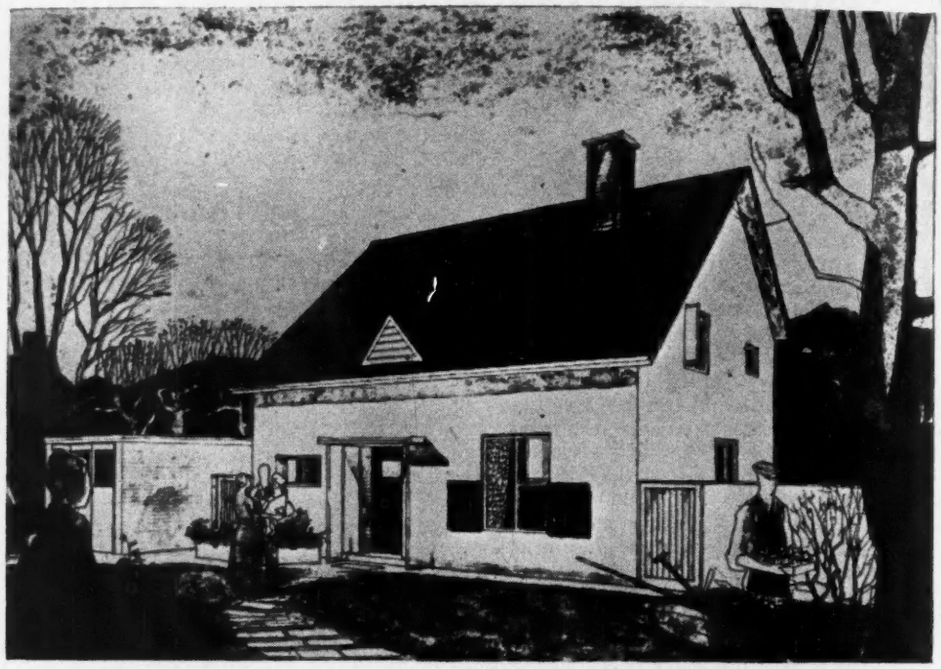
FRIDAY, JUNE 19

BRITISH TRANSPORT COMMISSION.—Exhibition of Railway Travel by Kings and Queens. Battersea Wharf Station, Chelsea Bridge. 10 a.m. to 7 p.m. Sundays 2 p.m. to 7 p.m. (Open to July 11.)

BIRMINGHAM AND DISTRICT INDUSTRIAL SAFETY GROUP.—Opening of second biennial Safety and Factory Efficiency Exhibition. Bingley Hall, Birmingham. 12 noon.

THE "NEWS CHRONICLE" HOUSE

Architect :
G. GRENFELL BAINES, ARIBA, AMTPI



THE house here illustrated is one of five designs commissioned by the "News Chronicle" in connection with their recent architectural competition for one- and two-storey dwelling-houses of 800 sq. ft. to a maximum of 1,000 sq. ft. of floor space. Designed by Mr. Grenfell Baines, ARIBA, AMTPI, this house was placed first in order of merit on the winning entry form submitted by a "News Chronicle" reader. Following is the architect's report on the house :—

This design for a characteristic cottage home is inspired by the four main objects highlighted in the early competitions. It seeks to be attractively simple, adaptable, economical and warm. It is a house for all occasions, a house of through views, comfortable to live in whether "rigged" for intimacy and privacy or opened out for spaciousness and the big events of family life.

Simplicity is achieved in the arrangement of the plan which catches the sun wherever the site faces. The shape of the building is simple; apart from the small dormer over the front entrance and the large projecting window to the living-room, there are no quirks in the lines of walls or roofs. Inside the main walls line through upstairs and down. Windows and doors simply rely on good proportion for effect. Though unusually comprehensive the heating and plumbing are simple and direct.

Individual room shapes are straightforward with plenty of plain wall for furniture, yet there are three distinct and interesting ways in which the ground-floor arrangement can be varied, the opening of the "disappearing" walls revealing new vistas and a spaciousness only found in conventional houses double the size. Two features combine to make the house adaptable. First, space is in the right place according to use and time, so there is much more space on the ground floor which is used for two-thirds of the time.

Second, the heating of the house and the disappearing walls on the ground floor together make a variety of arrangements possible, separate living-rooms downstairs and a study-bedroom upstairs; the whole of the ground-floor living space opened up; the hall added and the second bedroom used as a cosy retiring room, to mention only three.

As drawn the plan is suitable for north or east entrance, but by "handing" it can be made adaptable to entrance from the south or west; though entrance from the south is least favourable, the living spaces will in all cases receive sunshine.

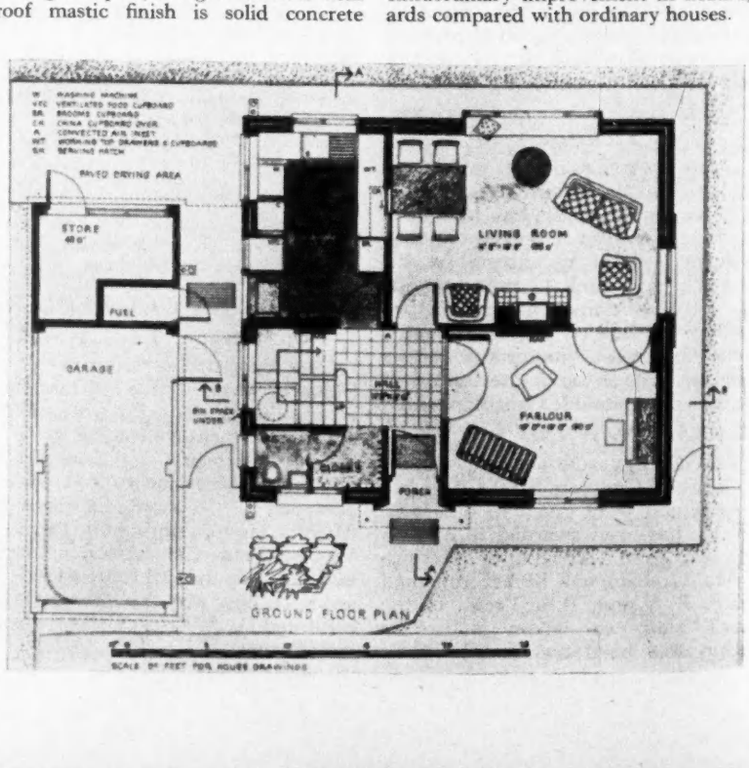
Economy arises naturally out of simplicity. On the ground floor where area is greatest the shape is almost square requiring the least perimeter of walls and foundations. Constructionally straightforward, it has walls over walls, short spans for floor joists, simple roof lines, compact plumbing with all service pipes inside the house automatically protected from frost and requiring a minimum of maintenance.

A few features which will make the house easy to run are the single fire, the simple windows with their large panes of glass, the careful arrangement of kitchen fittings with the generous through service fitting in the wall between living-room and kitchen and the "defence in depth" at the entrance door where sunk metal scrapers first and dry mats next should do much to clean the dirty shoes of husbands and children.

Care has been taken to make this a warm house. The inner linings of the walls are foamed slag insulating blocks, the upper-floor ceilings have a fibreglass quilt, the ground floor with waterproof mastic finish is solid concrete on a dry ash bed. Both exterior doors are generously protected from the weather by projecting hoods and the door facing the prevailing wind is draught-proofed by the latest method.

One fire heats the whole house and provides the hot water. It is of the latest type, highly efficient, giving an attractive open-fire appearance enhanced by a polished reflector over the fire which burns with a down draught thus consuming most of the smoke and keeping the reflector clean. Radiant and convected heat are provided. A special valve and duplicate return pipe make it possible to concentrate the output of the fire on the hot-water cylinder for washdays, repeated baths or other extraordinary demands. All heat sources, the fire and its chimney, pipes, radiators, hot-water cylinder, are in the middle of the plan, and very little heat will be lost.

The heating scheme provides 30 degrees rise in temperature for the living-room, parlour and the study-bedroom, with background heating in the whole of the remainder, an extraordinary improvement in heating standards compared with ordinary houses.

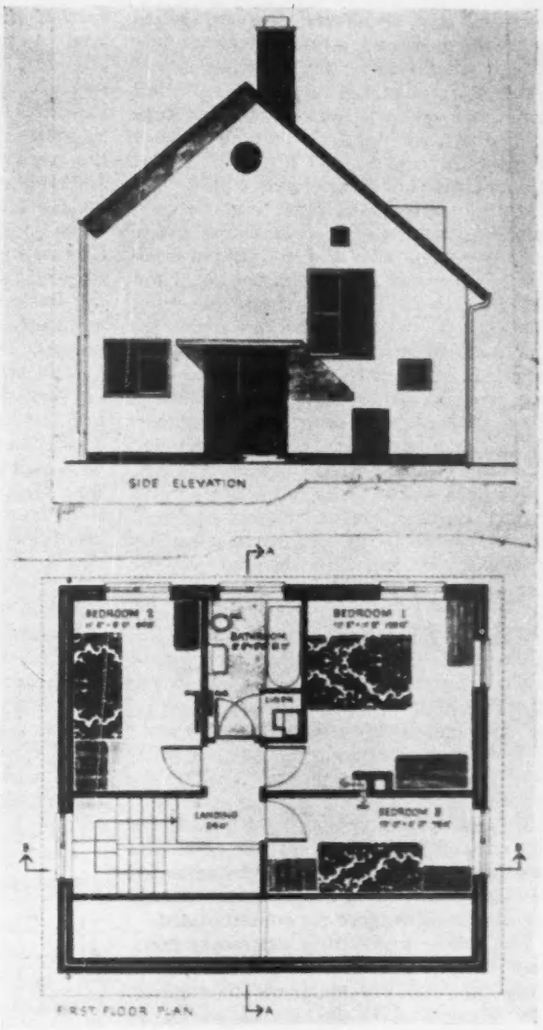


Naturally this increase in comfort will require more fuel and more care in operating the fire. It should be possible to enjoy a high standard of comfort on six tons of mixed fuel per annum. To cater for all tastes each radiator is valved as well as the special valve cutting out the heating system; fuel economy can thus be practised when preferred. An electric immersion heater is fitted in the hot water tank for summer use.

Construction.—Apart from the special heat insulating construction no special departures from normal building materials or practice are proposed; the construction employs the best traditional principles with up-to-date details. Window and door types are as few as possible. Framed roof construction according to the by now well-established Timber Development Association principles would be used to economise in timber and labour. Features of the electrical installation include standardised plugs on ring main and ceiling switches throughout to give greater convenience in use (less dirtying of walls by fingermarks) and economy in conduit cable and cutting of walls. The meter cupboard is conveniently placed at the front of the house to economise in public services.

Equipment.—For economy and to give maximum freedom of choice as between individual or built-in furniture all the built-in equipment is concentrated in the kitchen which is lavishly equipped for working and all kinds of storage. The price includes for electric washer, gas or electric cooker and a drying rack. A separate lavatory with small wash bowl is provided downstairs in addition to a fully equipped bathroom upstairs. A heated linen cupboard is provided, both kitchen and bathroom have towel rails with hot-water radiators below. The square entrance is generous while the turning stair with open landing above will be interesting.

Ample accommodation for coats is neatly arranged out of first view—the pram can be kept inside under the higher flight of the stairs. One feature which will add to the interest of living in the house is the large projecting window to the living-room, its low cill can be used as a seat or as a long play table for the small child.



SCHEDULE OF COSTS:

	£	s.	d.
Construction of house as specified in report including Hoover washer, standard electric or gas cooker, drying rack in kitchen, central heating scheme, fencing for normal size plot, paths ..	2,291	5	0
Extras.			
Pelmets to all windows except kitchen and bathroom	9	4	0
Fitted wardrobe in bedroom 1	10	10	0
do. bedroom 2	7	10	0
do. bedroom 3	7	10	0
Wood block floors in living-room and parlour	48	0	0
Tiled kitchen all round to a height of 3 ft. 6 in.	15	0	0
Tiled bathroom all round to a height of 3 ft. 6 in.	10	0	0
Built-in refrigerator in service fitting ..	50	0	0
Built-in book and radio shelf in living-room	5	5	0
Garage	160	0	0
Insulation to hot water cylinder	4	0	0
Good quality facing bricks	55	0	0

CORRESPONDENCE

FEES FOR THE SINGLE HOUSE

To the Editor of *The Builder*

SIR,—In your leading article of June 5 on this subject you point out that this is not a new problem, but I do not feel that your attempt at a solution is a very happy one.

I think we must review the position as a whole and not by individual houses. It may be that we have been so busy overtaking the shortage of state-aided houses that we have overlooked the would-be owner.

If as you say there are a considerable number of persons now wishing to build their own houses, I think we shall find they can be divided into two categories. Those wishing to have a house built to their own special requirements and those wishing to get a home. The former person was always willing to pay for a house which was made to fit his requirements or even his idiosyncrasies. The latter person was catered for by the speculative builder, who had studied the general requirements of the majority and had found a common denominator to work to.

Again, if we are to assume that all your inquirers wish to build a single house we shall be faced with the problem of separate dwellings, and no matter how well designed each might be they will form a sporadic development and we may easily find ourselves once again with an urban sprawl.

It is from this angle therefore that I think we should consider the problem. Proper site planning within the overall town plan is the first consideration and groups of houses could be built within a proper site plan. New Towns can do this with their architectural staff and speculative builders could do it if the houses were efficiently designed and properly supervised. I should like to emphasise the word supervise, not so much for the construction but to see that details are carried out correctly—most important and often overlooked.

Welwyn Garden City had this problem in the early days, after the First World War, when numbers of people wished to build what in those days was the £1,000 house. It was found that the requirements were so similar in each case that it was possible to design and build houses, knowing the demand, and sell them. These were designed and supervised and a proportion of the fees was spread over the whole, which was obviously less than designing one single house with its site problems and all that goes with one special house.

I think everyone would agree that the young architect should be given this work to do but not at a reduced fee. He is perhaps able to make it remunerative as he makes it an individual task. If as you say he gets £240 for a £4,000 house, then in order to make a net income of, say, £1,000 a year he would require to do at least eight houses a year or one every six weeks.

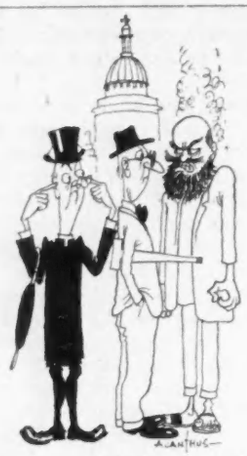
My answer is, for those who wish to avoid the paying of architects' fees, that houses should be built for them in well designed and properly supervised groups, which could be extremely charming and where the fee could be shared by all.

For those who want a house built on their own plot of land, to suit their own individual requirements, then they must and will be prepared to pay for this special service as they have in the past; it is money wisely and economically spent, and the best value of anything I know.

ARTHUR W. KENYON [CBE, FRIBA].
15, Adeline-place, Bedford-square, WC1.

To the Editor of *The Builder*

SIR,—As long as I can remember, and that is going back to the early years of the century, architects have been saying that there is "nothing" in small house design, by which they mean not enough money, though it is easy to recall the names of many who made considerable reputations, and presumably reasonably good incomes, in this class of work. Why is small house design so unremunerative? One can understand a large busy practice being unwilling to take on small houses, but there must be many architects in private practice who are not exactly overwhelmed with work, and to whom small houses should be a paying proposition if enough of them were forthcoming. There would seem to be a good opportunity here for enterprising young men just setting up in practice,



" When I describe the development around St. Paul's I get rather hot under the collar ! "

particularly if, as you suggested in your leading article last week, a way could be found to reduce fees to a level within the means of the prospective small house-owner.

It is often said that the reason for the success of the speculative builder is that he " throws in " the design. But does he ? Even the most offensive kind of suburban villa has to be " designed " by someone, generally a staff draughtsman, who has to be paid for getting out plans of sufficient technical decency to " get by " the local planning authority. This cost is, of course, passed on to the buyer in the price of the house. Prospective small houseowners need to be enlightened on this taradiddle about " free designs." There is an opportunity here for some useful " public relations " work by the RIBA.

Since the war great efforts have been made by the Institute to bring home to the public the need for architectural services in the design of all buildings. It must be very disappointing to the prospective small houseowner to find that the cost of these services is prohibitive. No one expects the architect to work at a loss, but is there any reason why he should ? Before the war it was not unknown for firms of architects to work profitably for speculative builders and, since supervision was not involved, presumably at fees considerably below scale. With the improved safeguards against shoddy building which we have today, is architectural supervision for small houses any longer necessary ? If not, fees could surely be heavily cut and the architect still be well in pocket.

The practical suggestions made in your leading article last week appear to me to offer, if not a solution of this problem, at least a hopeful basis for discussion, and I trust that the Practice Committee of the RIBA and the other organisations concerned will give them the careful consideration they deserve.

SPERO.

To the Editor of *The Builder*

SIR,—Your recent leading article on " Fees for the single house " (*The Builder*, June 5), falls into the error of assuming that architects' fees are added on to the builder's estimate without any benefit whatever to the building owner from the architect's services. In other words you entirely ignore the advantage of competitive tenders, the difference between the highest and lowest of which frequently covers the architect's fees.

In my experience there are, broadly speaking, two types of prospective house builders—those who wish to build a small house of pre-war semi-detached size, and the others who desire a single house of 1,500 sq. ft. with a high-class finish for which an additional licence can now be obtained. Generally speaking, the first type require what might be called a standard finish and, after the preparation of working drawings and a detailed specification and given a good builder, are of little worry to the architect. The second type, however, expect a high-class finish involving additional consultations with the client and builder and the preparation of detail drawings. This is the type of house which costs between £4,000 and £5,000.

The price range for the first type of house is normally between £2,000 and £2,500, and no quantities are required by the average builder who erects them ; in fact, quantities on this type of work usually send up the price. Unless the circumstances are exceptional the full-scale fees would appear to be high for this size of house, but six per cent. is a reasonable charge, and should be regarded as a minimum for a single house should any alteration in fees be contemplated.

The whole problem is extremely complicated and cannot be summed up as easily as your article seems to suggest. The greatest difficulty seems to be in deciding which house should be eligible for full fees and which should have the architect's service " on the cheap." I am afraid that, if your suggestions were carried out, many architects would suffer at the present time.

HERBERT J. POWELL, FRIBA.

338, Upper Ledbury-road, Hereford.

To the Editor of *The Builder*

SIR,—In your issue of June 5 you point out that the architect's fees on a £4,000 house may be not less than £240, but had you considered the 15 per cent. surcharge (£36 on £240)—which is generally well earned—also the cost of surveying the site, if necessary, submitting plans to and obtaining the approval of the local and licensing authorities and the cost of travelling, which may be appreciable if the job is some way from the architect's office, duplicating the specification and other out-of-pocket expenses which are not covered by the 6 per cent. ?

To endeavour to get over the fee difficulty you suggest that the RIBA might approve of architects disregarding the existing scale for small houses and charging what they like, but would this not lead to chaos regarding fees ? Recently an architect was paid two-thirds fees when the erection of a house—for which he had prepared the plans, etc.—was held up for a licence. Later, when the licence was obtained, to try to economise, the client decided to dispense with the architect's further services. To endeavour to prevent a possible tragedy, the architect offered to supply in an honorary capacity some detail drawings and supervision. Possibly something on these lines could be arranged which would not undermine the recognised scale.

Many clients do not realise that fees are not all profit. Fifty per cent. or more often goes in office expenses and, after the Chancellor of the Exchequer has had his rake-off, there is frequently little left for the designer. It is not only some busy architects who are not interested in small houses. Some time ago an architect with a small provincial practice told me that he had designed two such houses, but had lost so much on them that he was not undertaking any more. By going direct to a builder a client does not necessarily save fees. One builder admitted to me that when he prepared the plans and so acted as the architect he always added the architect's fees to the cost of the house !

When building owners will not employ competent architects, the Advisory Panels, referred to in Mr. Woolnough's letter last week, can give valuable help in preventing some of the worst results of incompetent design, if the Panels are constituted on sound lines as suggested by the Central Panels Committee and are supported by the local authorities.

C. B. WILLCOCKS.

Reading.

LABOUR AND THE CORONATION

To the Editor of *The Builder*

SIR,—Nowadays it is more usual to criticise the output of building trade labour, but since my company has been responsible for the erection and clearing away of very many stands, mainly in private premises, for the purpose of viewing the coronation procession, it is with the greatest pleasure that I can testify to the energy, good will and hard work put into this programme by the operatives in our employ.

All calls put upon our labour force were readily answered, and the result has been to give satisfaction to all concerned, and I feel it is a very happy and reassuring augury for the reign of Queen Elizabeth II.

ALEC NASH, Managing Director,
Hall, Beddall and Co., Ltd.

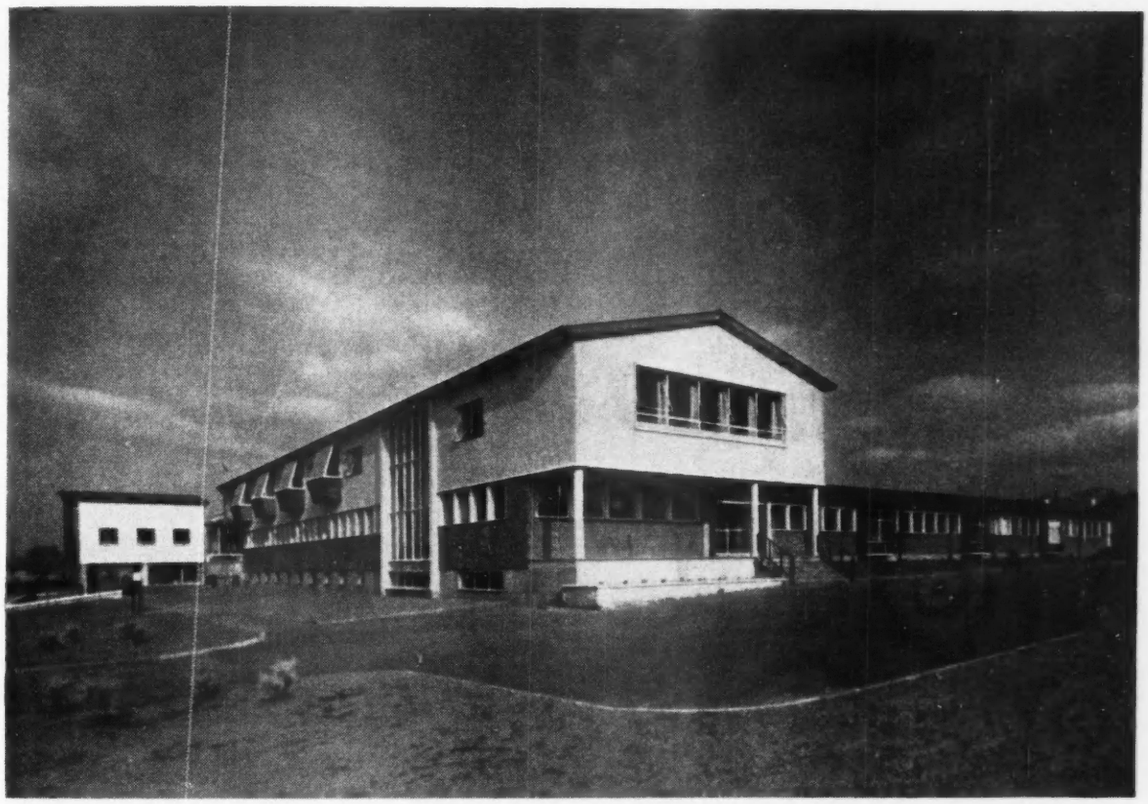
Pitfield Wharf, SE1.

NEW DEVELOPMENTS

A ONE-DAY COURSE on twentieth-century developments in architecture and building, for teachers and members of the professions and occupations concerned, will be held at Oxford Town Hall, on June 20.

The speakers will be : Mr. T. E. Scott, CBE, FRIBA, head of the Department of Architecture, Surveying and Building, at the Northern Polytechnic, London, Mr. D. E. Woodbine Parish, past-president LMBA, Mr. D. A. G. Reid, principal of Brixton School of Building, and Mr. K. Bishop, a general building foreman.

Programmes and further details are available from the Secretary, Southern Regional Council for Further Education, Shire Hall, Reading.



A view from the north-west, showing the main entrance, the bay windows of the dental surgeries and, on the left, the entrance to the child welfare unit under the projecting lecture room.

HEALTH CENTRE, SIGHTHILL, EDINBURGH

DESIGNED BY ARCHITECTS OF THE DEPARTMENT OF HEALTH FOR SCOTLAND

Lately Chief Architect :
ROBERT GARDNER-MEDWIN, FRIBA, MTPI

Deputy Chief Architect for Special Buildings :
ROBERT MORTON, ARIBA, AMTPI

Senior Architects in Charge :
JOHN OGILVIE, ARIBA, and GEORGE LAWRENCE, ARIBA, MTPI

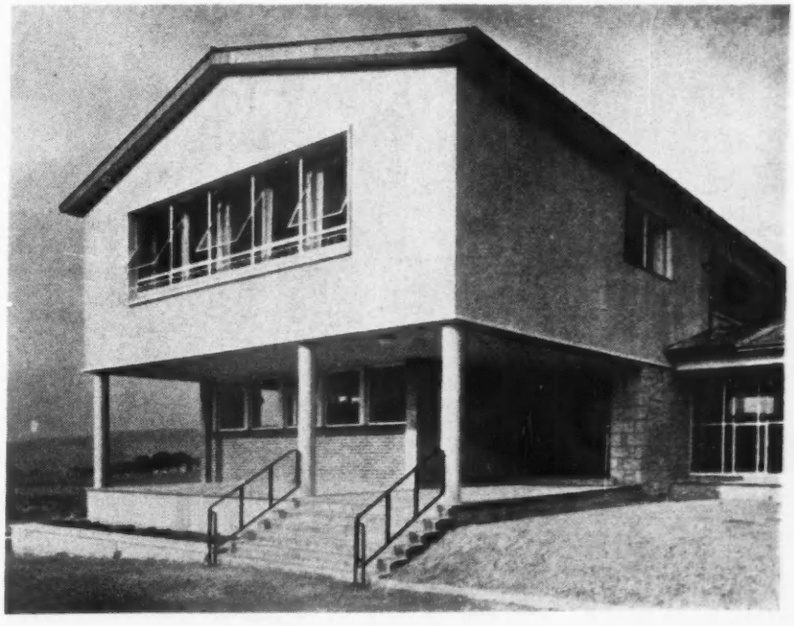
Assistant Architect :
ERIC HALL, ARIBA

Architectural Assistants :
R. J. WALKER, ARIBA, D. A. MacGILLIVRAY and R. E. A. EADIE

Consultant Structural Engineer :
W. A. FAIRHURST, MIStructE

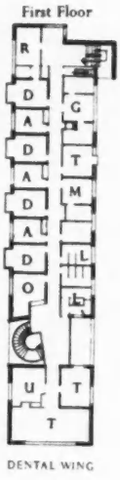
Consultant Heating Engineers :
OSCAR FABER & PARTNERS

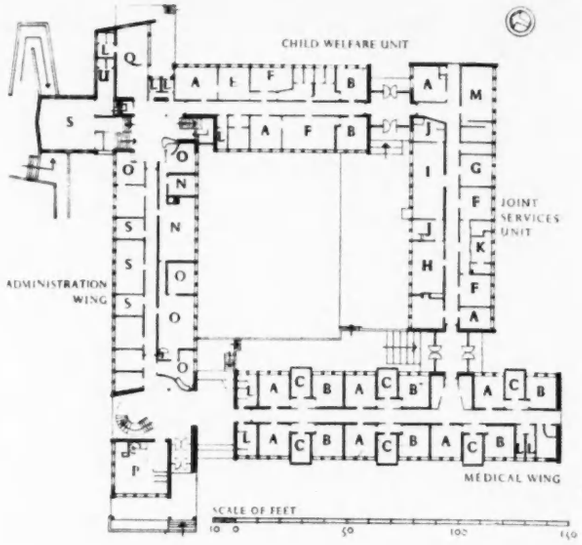
Consultant Quantity Surveyor :
P. W. DIXON, MBE, ARICS



The main entrance. The pharmacy can be seen on the left of the entrance with the main staff room windows above.

A Waiting Room
B Consulting Room
C Examination Room
D Dental Surgery
E Baby Weighing Room
F Treatment Room
G Laboratory
H Physiotherapist
I Gymnasium
J Changing Room
K Sterilising Room
L Lavatory
M X-ray Room
N Nurses' Office
O Office
P Pharmacy
Q Children's Playroom
R Recovery Room
S Lecture Room; Study
T Staff Room
U Kitchen





THE Sighthill Health Centre is the first to be built in Scotland. Sighthill was chosen as the site for an experimental centre as a new housing area with a considerable population, which was not adequately served by existing facilities. The Centre was designed and built by the Department of Health for Scotland in consultation with Edinburgh Corporation and other interested parties.

The building is planned in the form of a hollow square round a central garden courtyard. On the west, south and east of the courtyard are single storey wings and on the north side is a wing of basement and two storeys. The general practitioners' wing contains six similar suites, each of waiting-room, consulting room and examination room. These suites are self-contained and have a small private lobby. The local authority wing provides for the child welfare service a waiting-room, baby weighing room, changing room and consulting rooms, and for the school health service a waiting-room, treatment room and consulting room. This wing has a separate entrance with covered parking space for perambulators. It also includes a

A view of the courtyard from the south-west. The projecting windows of the examination rooms can be seen on the left.

Main entrance from the first floor. Below : Main staircase seen from the pharmacy entrance.

Main entrance hall ; reception desk on the right. The floor is of Caithness stone slabs.

lecture room, with a demonstration kitchen, a playroom for toddlers, an inquiry office and a distribution counter for health foods. Situated between the general practitioners' wing and the local authority wing is a joint services wing which will provide X-ray facilities, sterilising and dressing rooms, a laboratory and a physiotherapists' suite with gymnasium for remedial exercises.

The dental wing which is situated on the first floor contains four surgeries, two of which will be operated by the local authority. One of the local authority surgeries will be equipped for treatment of children. There are three waiting-rooms and a recovery room, also a dental workshop and a dental X-ray and dark room. The administration wing contains offices, including a general office and interview room to be used by the district nurses. It also contains classrooms and studies. In addition there are staff rooms and a kitchen. The basement provides storage space and service rooms. The total floor area of the building is in the neighbourhood of 35,000 sq. ft.

Construction.—The single-storey wings are built with solid concrete floors and with 7 in. by 7 in. reinforced concrete pillars at 4 ft. 9 in. centres supporting a reinforced concrete eaves beam. The roof which is supported on a cold-rolled steel framework is of reinforced Gypklith covered with sheet copper. The framework spans between the eaves beams and is not supported by the internal partitions. The wall cladding is of cavity construction, the outer skin being of 4½ in. Dunbrick facing bricks, the inner skin 4 in. foamed slag concrete blocks. On the first floor the walls are of 11 in. cavity brick roughcast on the outside and lined with 2 in. foamed slag concrete blocks. The internal partitions are of foamed slag concrete. The basement walls are of 7 in. reinforced concrete with a damp-proof membrane and a lining of 3 in. foamed slag blocks. Above ground level this wall is faced on the outside with concrete facing slabs, acid washed to expose the aggregate. The internal partitions are of foamed slag concrete blocks. In the case of rooms where privacy is of particular importance a double partition of 2½ in. blocks with a 2 in. cavity is used to provide better sound insulation. Window frames are of steel. Window cills are of slate. Some rubble free-stone load-carrying walls are incorporated in the design to provide a contrasting texture to the brick and roughcast finishes.

Heating System.—The building is heated by electrical floor and wall panels operated from the " off peak " electrical supply. Electrical cables are run in conduit which has been built into the floor screed and the wall partitions. Each circuit is controlled by a thermostat which operates according to the air temperature of the room in which it is situated. Wall panels are backed by heat-reflecting material. The heat which is built up during the " off peak " hours is contained in the fabric of the building during the remainder of the day. A boost to the heating is obtained in the middle of each day.

Services.—Hot water is supplied through electric calorifiers operated from the " off peak " electrical supply. The sterilising equipment is similarly operated. Hot, cold and main water, gas and compressed air are circulated to rooms as required. Electric power is supplied through ring mains to 13 ampere sockets. The mains are run in ducts in the external walls with access boxes in each window bay. This allows some flexibility in the position of the socket outlets.

Finishings.—The internal wall finish is plaster. Suspended ceilings are for the most part covered in insulation board cut in square panels. Some ceilings are finished in plaster and some in acoustic plaster. A variety of floor finishes has been used as the building is of an experimental nature. The floor finishes include wood block, cork tile, thermoplastic tile, linoleum in sheet and tile form, Fleximer

The courtyard seen from the waiting space in the main entrance hall.

flooring, mastic asphalt and terrazzo. The links and entrance hall are floored in slabs of Caithness stone. Internal wood finishes include mahogany and softwood skirtings and surrounds. Flush doors are veneered in mahogany and poplar. The external wood cladding on the bay windows is of Afrormosia, a West African wood similar to teak.

Furnishing and Decoration.—An attempt has been made to create a fresh and non-institutional atmosphere by the use of bright colours in paint, wallpaper and floor coverings. Curtains in non-clinical rooms are for the most part of printed fabrics. The furniture has been kept as light as is possible consistent with the wear and tear to which it will be subjected.

Garden.—The garden, which is unfenced, has been laid out with lawns and flowering shrubs to give a pleasant setting for the building and to reduce maintenance to a minimum. In the courtyard there are three mature silver birch trees which were transplanted from the grounds of a hospital 20 miles distant. Following is a list of contractors and sub-contractors engaged on this scheme :—

Contractors.—Excavation and reinforced concrete work, Fram Reinforced Concrete Co., Glasgow, C1 ; mason and brickwork, John Martin and Co., Ltd., Edinburgh, 2 ; asphalt work, Neuchatel Asphalte Co., Ltd., Edinburgh, 2 ; copper roofing work, F. Braby and Co., Ltd., Glasgow, N ; metal windows, Williams and Williams, Ltd., Chester ; carpenter and joiner work, Nathaniel Grieve, Edinburgh, 11 ; glazier work, James Thow, Ltd., Ayr ; plaster work, D. & J. Borthwick, Edinburgh, 3.

Plumber work, William Barton and Sons, Ltd., Edinburgh, 1 ; electrical work, Drake and Gorham (Contractors), Ltd., Edinburgh, 1 ; electrical floor heating, Electric Panels, Ltd., Reigate, Surrey ; blacksmith work, Thomas Hadden, Edinburgh, 12, and James Blake and Co., Edinburgh, 6 ; painter work, T. W. Scott, Edinburgh, 2 ; roads and paths, H. V. Smith, Edinburgh, 2 ; garden work, Young and Thomson, Edinburgh, 10.

Sub-contractors.—Roof steel work, Ayrshire Dockyard Co., Ltd., Ayrshire ; steel erection, M. Barr, Glasgow ; precast concrete work and facing slabs, Edinburgh Cast Stone Co., Edinburgh, 11 ; damp courses, Wm. Briggs and Sons, Ltd., Edinburgh, 12 ; reinforced Gyplith, Gyproc Products, Ltd., Glasgow ; wood block flooring, A. M. Macdougal and Son, Ltd., Glasgow, C2 ; cork floors, Armstrong Cork Co., Ltd. ; Colterro lath for suspended ceilings, W. H. Colt (London) Ltd. ; linoleum, Korkoid Decorative Floors ; terrazzo work, Toffolo Jackson and Co., Edinburgh ; thermoplastic tiles and cement rubber latex flooring, Semtex, Ltd. ; water tank, Braithwaite and Co., Structural, Ltd., Newport, Mon.

Furniture manufacturers.—George M. Hammer and Co., Ltd., Harringay, London ; Russell Furnishings, Ltd., London, W1 ; Ernest Race, Ltd., Clapham, London ; S. Hille and Co., Ltd., Watford, Herts. ; The Scottish Co-operative Wholesale Soc., Ltd., Glasgow ; Rowan and Bowden, Ltd., Glasgow, C2.

Soft furnishings.—Martin and Son (Edinburgh), Ltd.

HEALTH CENTRE, SIGHTHILL, EDINBURGH

A dental surgery. The large double-glazed bay windows which project on the north front were designed to give the dentist the maximum possible light.

MULTI-STOREY FLATS AT "MOSS HEIGHTS," BERRYKNOWES ROAD, GLASGOW

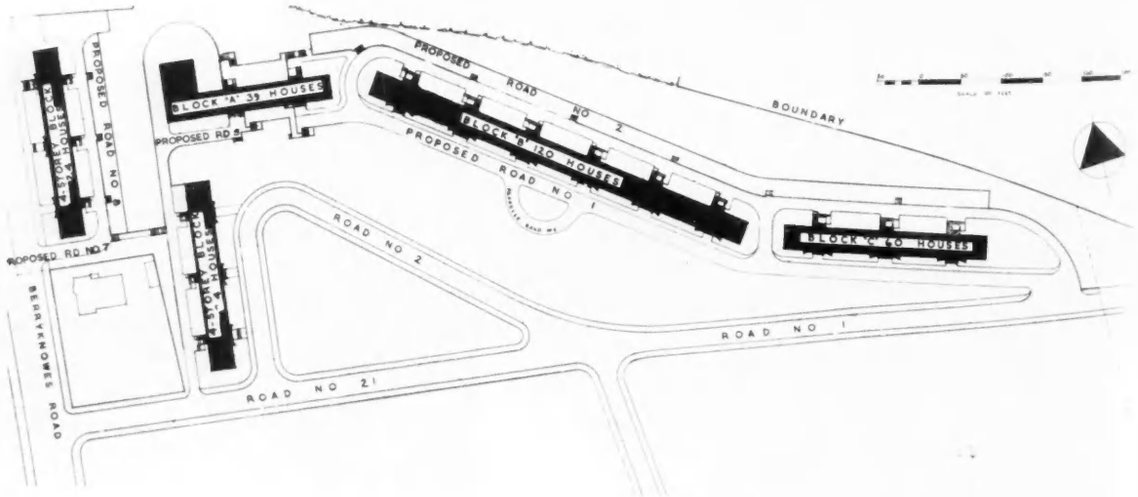
Architects :
CORPORATION OF GLASGOW ARCHITECTURAL AND PLANNING DEPARTMENT (HOUSING SECTION) UNDER THE DIRECTION OF A. G. JURY, FRIBA, FRIAS

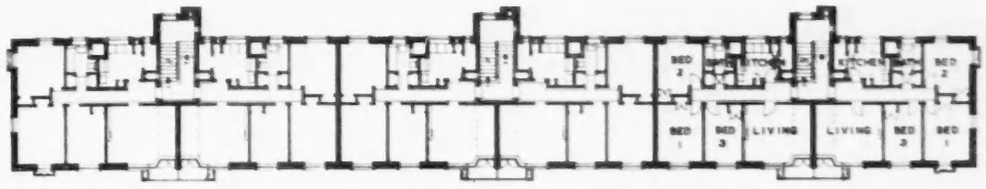
Consulting Structural Engineers :
F. A. McDONALD & PARTNERS

Consulting Heating and Electrical Engineers :
ROSS, BARKER AND WALLACE

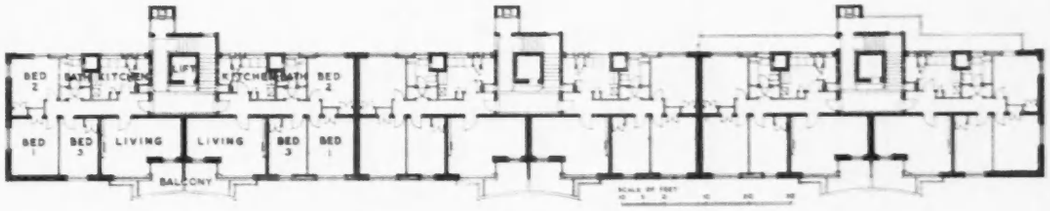
Builders :
HOLLAND & HANNEN AND CUBITTS

View of a 10-storey block from the south.





Typical upper-floor plan of 4-storey block.



Typical upper-floor plan of 10-storey block.

THE scheme consists of 267 flats of three and four apartments 219 of the flats are in three blocks of ten storeys, the remainder being in two blocks of four storeys. The ten-storey blocks have 7 in. reinforced concrete walls, roofs and floor slabs. The outer walls are faced with 2 in. precast concrete slabs with a Dorset pea finish and internally have a 2 in. cavity and 3 in. foamslag wall. Floors are $\frac{7}{8}$ in. wood on $1\frac{1}{2}$ in. by $1\frac{1}{2}$ in. battens on celotex pads and floor clips. The four-storey blocks have brick cavity walls and are rendered with a white Tyrolean finish. The ground floors are concrete with asphalt tiles and the upper floors wood with wood joists. Space heating and domestic hot water is supplied to all flats from a central boiler-house attached to one of the blocks. Automatic lifts are provided in the ten-storey blocks only (one per 20 flats), and all blocks in the scheme have refuse disposal chutes off stair landings designed for the Paladin method of removal. The living-room in each flat has a small electric fire in a tile surround with book shelving alongside. In the absence of open fires small gas incinerators are provided. Each kitchen has a large drying cupboard heated by a coil from the domestic hot water system. Drainage is by the one pipe system in a duct which carries the various other services. Following is a list of sub-contractors :—

Joinery, E. Gibbon and Sons, Ltd. ; glazing, A. S. Wright and Co., Ltd.; roughcast, Charles Wilson, Ltd. ; plumbing, Engineering Services Installations ; plastering, George Rome and Co., Ltd. ; painting, Scott (Decorators), Ltd. ; steel windows, Crittall Manufacturing Co., Ltd. ; asphalt and bituminous roof covering, Wm. Briggs and Sons, Ltd. ; iron railings, Robert Baird ; digging, Scottish Land Development ; heating, Brightside Foundry and Engineering Co., Ltd. ; lifts, Waygood Otis, Ltd. (all of Glasgow) ; electrical work, James Kilpatrick and Son, Ltd., Paisley

View from the west corner of the site.

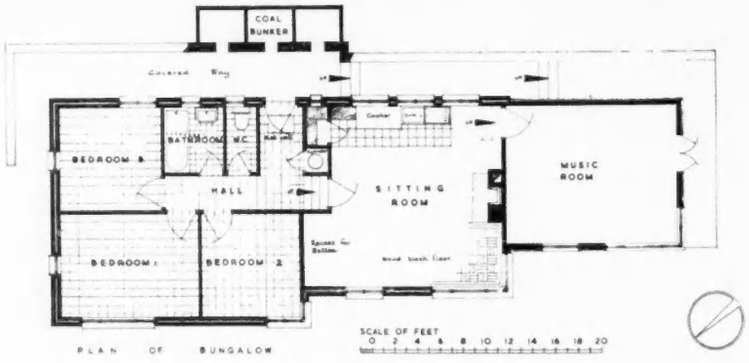
MULTI-STOREY FLATS AT "MOSS HEIGHTS," GLASGOW

View from south-west.

THE ORCHARD, KINGSDOWN, BOX, WILTS

Architects :
ROLFE & CROZIER COLE, ARIBA

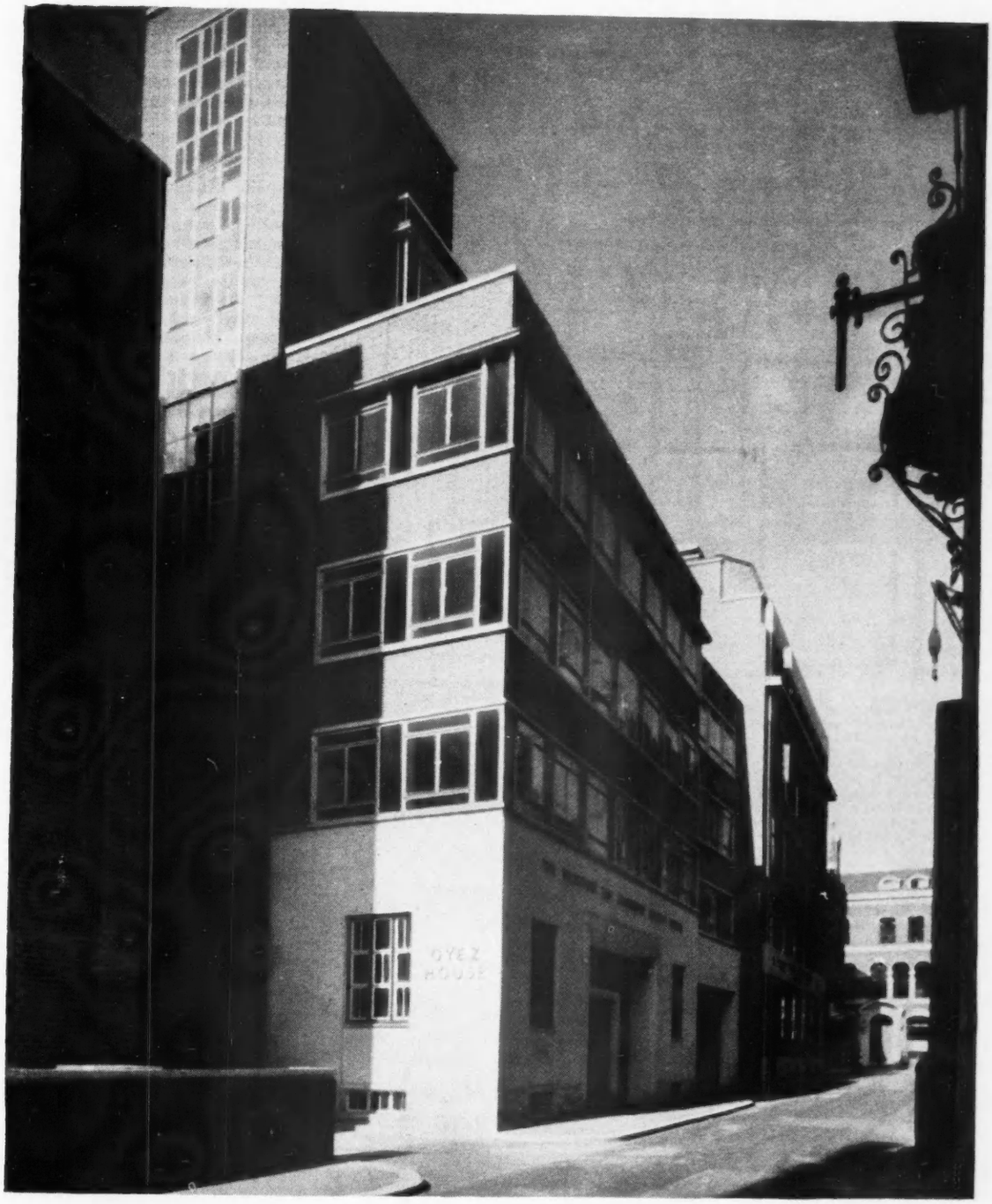
Builders :
HAWKINS BROTHERS



PLAN OF BUNGALOW

The music-room, with sitting-room and bedrooms beyond.

THIS single-storey house occupies a falling site overlooking the Avon Valley from Kingsdown, near Bath. Because of the slope, the house was planned at three levels. There is a roomy loft over the bedroom and sitting-room portions, which will eventually be converted into a studio. The house is built of concrete block walls faced with Bath stone with a cedar shingle roof. The music-room has walls of shingles hung on battens to 6-in. concrete blocks. This portion of the scheme was built first as an entirely isolated building. The builders were Messrs. Hawkins Brothers, Bathford, Bath.



View from Norwich-street.

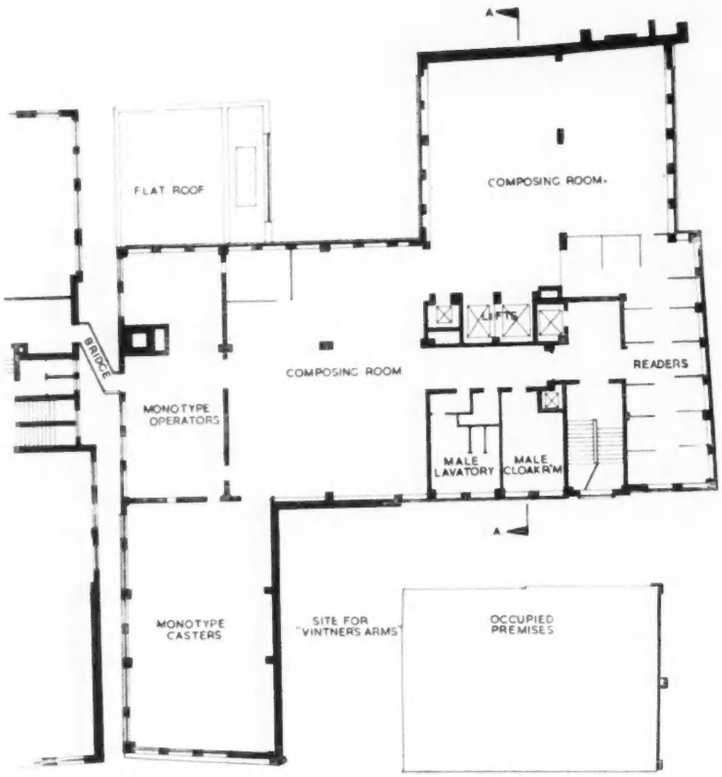
OYEZ HOUSE, FETTER LANE, EC4

For the Solicitors' Law Stationery Society, Limited

Architects :
T. P. BENNETT & SON

Quantity Surveyors :
GARDINER & THEOBALD

Builders :
HARRY NEAL, LTD.



FIRST FLOOR PLAN

GROUND FLOOR PLAN

THE building here illustrated is the first stage of the redevelopment of the group of bomb-damaged sites bounded by Fetter-lane, Norwich-street, and Bream's Buildings to provide head offices and printing works for the Solicitors' Law Stationery Society, Ltd., whose premises previously occupied a part of the area.

The site is divided into approximately two equal parts by the public foot passage known as Greystoke-place, and in the northern half there is a site for the "Vintners Arms" public-house, and the southern half is the site for the "White Swan" public-house, both of which are to be reinstated. It was desired to produce a scheme of cohesive development retaining the public foot passage and rebuilding the public-houses as integral parts of the scheme, but retaining them as separate entities.

The main entrance to the Solicitors' Law Stationery Society's head offices is planned in Bream's Buildings and the works entrance and delivery yard are in Norwich-street. Owing to licensing restrictions the development is limited for the time being to the northern half of the site, and the works entrance is being used as the entrance to the temporary offices on the upper floors.

It is intended ultimately to bridge Greystoke-place at first-floor level and extend the upper floors in a southerly direction to link up with the entrance in Bream's Buildings. The external wall to the upper floors on Greystoke-place is a temporary enclosure, and the iron gangways connecting the upper floors with the existing damaged building on the south side of Greystoke-place provide temporary alternative means of escape pending the completion of the development.

Internal Planning.—The departments equipped with heavy machinery have, as far as possible, been planned on the lower floors, the departments with lighter machinery being accommodated at intermediate floor levels, while the works canteen and temporary head office accommodation have been planned on the top floor.

The monotype department is arranged on the first floor in such a position as to minimise the effect of the noise on the working of other departments. The floor and walls of the monotype department have also been insulated as an additional precaution against sound transmission, and acoustical treatment has been adopted to improve working conditions for the monotype caster and keyboard operators. To ensure satisfactory atmospheric conditions for printing, the letter press department and die-stamping department are fully air-conditioned, and mechanical ventilation is provided to the monotype department.

Construction.—The building is steel-framed, supported on steel grillages and reinforced concrete foundations. Structural floors are of hollow tile and reinforced concrete construction designed to carry loads varying from 5 cwt. per ft. super in the monotype department and second-floor composing room, 3 cwt. per ft. super on all other floors up to and including the fourth

floor, and 1 cwt. per ft. super on the fifth floor. Due to the heavy superimposed loadings and town planning limitations on the overall height of the building, it was essential to reduce beam depths to the minimum possible. This was achieved by the use of double columns with the floor beams passing through on a specially designed seating.

The main beams were jointed at quarter points with a simple form of welded seating and this system had the effect of reducing the total height by some 3 ft. External walls are 13½ in. brickwork. Lift and staircase enclosures are 9 in. brickwork. Glazed metal partitions have been used for the offices. The letter press, die-stamping and despatch department floors are finished with Betonac hardened paving. Floors to other departments and offices are finished with 1 in. Missanda hardwood blocks. The general wall finish in the works department is painted fair faced brickwork with painted plastered ceilings. The offices and canteen are plastered and distempered. The floor to the entrance hall is finished with terrazzo and the walls and ceilings are plastered and painted.

Elevation treatment.—The building is faced with Portland stone up to first-floor level, and red brick facings with artificial stone dressings to windows above the first floor. The surround to the main entrance in Norwich-street is Verde Polcevera marble. The main entrance doors are in polished African mahogany and Australian walnut. Following is a list of the principal sub-contractors :—

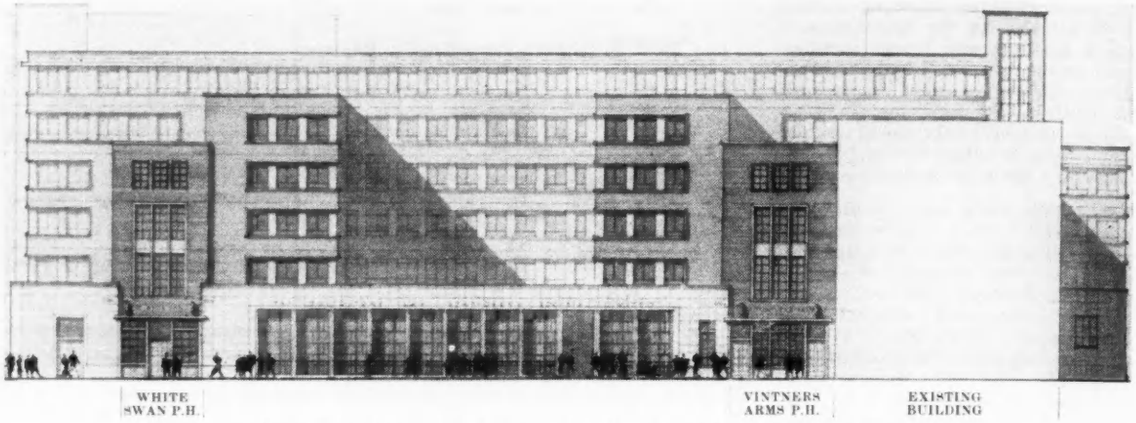
SECTION A-A

Structural steel work, Matthew T. Shaw, Ltd.; structural floors, Caxton Floors, Ltd.; lifts, Marryat and Scott; central heating air conditioning and mechanical ventilation, Norris Warming and Co., Ltd.; hardened pavings and waterproof rendering, Quickset Water Sealers, Ltd.; hardwood block flooring, Hollis Bros.; metal partitions, Roneo, Ltd.; plumbing, Structural Services, Ltd.; asphalt, Durable Asphalte Co.

Canteen kitchen equipment, Intel Caterers, Ltd.; Artcon paving, Ragusa Asphalte Co.; sprinkler installation, Mather and Platt, Ltd.; acoustical treatment, H. W. Cullum, Ltd.; electrical installation, Bective Electrical Co., Ltd.; monotype services, J. C. Mather, Ltd.; sanitary fittings, Stitsons Sanitary Fittings, Ltd.; iron staircases, balustrades, railings, etc., F. A. Norris and Co.; terrazzo paving, Art Pavements and Decorations, Ltd.; marble, J. Whitehead and Sons, Ltd.; external lettering, William Pickford, Ltd; windows, Crittall Manufacturing Co.

Portland stone, South-Western Stone Co., Ltd.; artificial stone, Empire Stone Co.; delivery yard gates, Bolton Gate Co.; ironmongery, N. F. Ramsay and Co., Ltd.; reinforcing steel in foundations, Twisteel Reinforcement, Ltd.; fire shutters, Dennison Kett Co., Ltd.; lightning conductors, R. C. Cutting and Co., Ltd.; pavement lights, Haywards, Ltd.; tiled partitions, Carter and Co., Ltd.; internal signs, The Lettering Centre.

Detail of entrance in Norwich-street.



An elevational drawing of the completed project : Fetter-lane frontage.

Composing room.

Monotype casting department.

OYEZ HOUSE, FETTER LANE, EC4

Papers at the British Architects' Conference

SCHOOL BUILDINGS AND THE INTER-RELATED PROBLEMS OF THE OFFICIAL AND PRIVATE ARCHITECT

FIVE PAPERS are being read at the British Architects' Conference, held at Canterbury and Folkestone this week. Yesterday (June 11) two papers on school buildings were presented (at Canterbury) by, respectively, Mr. S. A. W. Johnson-Marshall, ARIBA, Chief Architect to the Ministry of Education, and Mr. Richard Sheppard, FRIBA; these we reproduce below. The remaining three papers, which are being read to-day (at Folkestone) are "How the Local Authority Works," by Mr. C. H. Aslin, CBE, V-PRIBA, County Architect, Hertfordshire; "Collaboration Between Official and Private Architects," by S. H. Loweth, FSA, FRIBA, County Architect, Kent; and "The Private Architect's Problem," by Mr. F. R. S. Yorke, FRIBA. They will be reproduced in subsequent issues of "The Builder."

The Architect's Contribution to Value for Money in School Building and the role of the Ministry of Education

By S. A. W. JOHNSON-MARSHALL, ARIBA,
Chief Architect, Ministry of Education

MOST of us spend so much time grappling with our particular problems that we seldom have the opportunity to collect the evidence necessary to see how we are progressing collectively. But we can use the Ministry of Education as an observation tower—I hope not wholly ivory—from which to review the broad pattern of post-war school building. In the first part of the paper I propose to do so, but I intend to concentrate on that part of the view which might be termed "economics," because Richard Sheppard has dealt fully with other aspects in his paper.

In his inaugural address last year the President of the RIBA referred to architecture as a service. It is pertinent to ask what kind of service the architect has rendered in the last six difficult and exciting years. The school building programme is a particularly good vehicle to use for this review, because unlike other types of building, such as housing or industrial buildings, schools have been almost the exclusive responsibility of the architect. Whether they fall short of the nation's needs in terms of time, quality and price, or how far they go towards meeting them, the technical responsibility is first and foremost that of the architect.

The extent of the programme is approximately £40,000,000 a year. And that programme has *got* to be carried out in time to house the growing child population. With very few exceptions all children have so far been provided with a seat. This has meant building over 1,500 schools—a much greater effort than in any previous period of equivalent length.

Monetarily, perhaps 1949 was the critical year because the economic crisis of that autumn produced a challenging situation. The choice had to be made between fewer schools at the same price, the same number but of poorer quality or the same number and the same quality at a lower price. The profession accepted the challenge and with the whole-hearted co-operation of their educational clients they launched a carefully considered attack on costs. That attack has been continuously maintained against a rising tide of prices of both labour and materials. Its first phase comprised the reduction of the total area of the building without reducing teaching area—in fact the area devoted to teaching has in many cases increased. The second phase is directed towards the simplification of techniques and components from lavatory basins to boiler houses. It must be made clear that the aim of the Ministry has not been just cheapness—it has been rather to encourage architects to strive after the right balance between quality and economy.

The results of their work are surprising. In 1949 secondary schools had an average area per place of 111 sq. ft. and a cost per place of over £320, which at current prices would be equivalent to over £450. Now the corresponding figures are 75 sq. ft. and £240 a place, and the quality of building is being maintained.

The average costs, in real terms, for primary and secondary schools are 45 per cent. cheaper than they were in 1949. To put this another way, each school place now takes little more than half the labour and materials that it did in 1949. Furthermore, schools are slightly more economical than they were before the war.

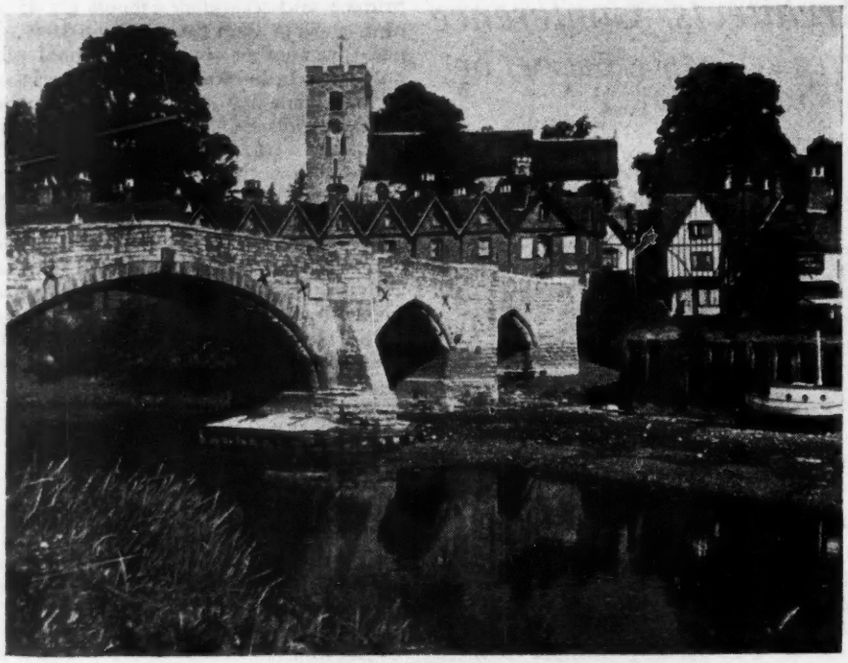
While these figures are somewhat sensational they do not conceal any black magic. They have been attained by deliberate rethinking of most of the familiar problems and by hard work. In both of these activities the architect has been immensely helped by working more closely than usual with a client who has made notable contributions to the better arrangement of space and who now gladly accepts the adventure of using new buildings whose planning is fundamentally different from those of 1949.

You might consider this to be a worthy achievement in any circumstances, but it must be viewed against the background of unprecedented post-war changes and shortages. Paradoxically enough these conditions have, I think, helped rather than hindered us because they have forced us to question all our accepted methods and practices and have engendered a spirit of adventure which was often lacking before the war.

It is the work of local education authorities through their public and private architects which has produced these figures, but the Ministry of Education has inevitably had to take a part in the early stage of the production line. Mr. Aslin and Mr. Loweth in their papers describe how the work is being done by local education authorities, so it might be useful if I tried to summarise the role of that part of the Ministry of Education which is responsible for building.

In 1949 it became evident that the solution of many of our problems which were labelled "building" lay somewhere between administration, education and

Watchbell-street, Rye, Sussex.



Aylesford, Kent, with the 14th-century bridge in foreground.

technics, and that they would yield far more readily to a combined attack by these three skills than by a series of separate attacks. The Ministry, therefore, amalgamated its administrative and technical branches responsible for building.

The hybrid, called Architects' and Building Branch, with its prime motive of shared responsibility, is a unique unit of central government. It is run jointly by a senior administrator and an architect and has senior educators working permanently with it. Its functions may be summarised under three headings :—

Economic planning, which is concerned with the educational bid for a share of the country's capital investment and the preparation and control, in conjunction with other branches and local education authorities, of the annual building programme. Among its instruments are statistics of educational building progress, speed of building and costs.

It was realised that architects could give very much better service if they knew as far ahead as possible what buildings they had to build and when they were expected to build them. In consequence, a system of annual programming was introduced in 1949. This gives one to two years' notice to local authorities of their whole annual programme, and two to three years' notice of half their next programme. The new approach has enabled the Ministry to make a clear statement *before* the architect starts work of all the rules governing school building. These cover the Building Regulations (which have been largely rewritten in terms of principle), the amount of money he will be allowed to expend on any given project, and the amount of rationed materials.

Territorial work. This comprises teams of architects and administrators who deal with local education authorities' building programmes and their schemes, the settling of schedules of accommodation, the discussion of schemes in their embryonic stage, and the detailed administration of timber, steel and monetary allocations ; and finally, liaison with the Ministry of Works Regional Offices in order to obtain starting dates.

It has been the aim of the Ministry to try to abolish the unrewarding and unprofitable task of scrutinising the details of other architects' works and instead to concentrate on the more creative spheres of research into educational needs and their technical implications. It was logical, therefore, to abolish the compulsory submission of sketch designs and so to free our architects to engage in discussions at the embryonic stage of design. These discussions tend to be more constructive because they now take place at the wish of the local education authority and not under the compulsion of the Ministry.

The duty of architects engaged on territorial work (it is so named because it is organised on a territorial basis) is to circulate new ideas on school building that may have originated in the field of local authority building or in the Development Group and to collect worthwhile information during the course of their visits and discussions.

Development as we see it consists in the first place of designing to meet educational needs, either in less space or by improving facilities through a better use of space. The second is the development of building techniques, of services, fittings, furniture, etc. An essential basis for both of these is cost planning and cost analysis to which I will return later.

Experience showed that schools were taking too long to build. Primary schools averaged over two years and secondary schools three years. In many areas where large numbers of schools were required there was and still is an acute shortage of site labour—particularly of bricklayers and of plasterers. It is evident that if the nation's schools cannot be built fast enough or cheaply enough there is always a danger of the client reverting to huts in the interest of speed and cheapness.

The choice of labour-saving techniques available to authorities who wished to adopt them was, however, very limited ; the productive capacity of the manufacturers who were already interested in this work was small in relation to the potential demand. The Ministry, therefore, concluded that additional productive capacity and a wider range of choice ought to be made available, especially to meet the growing need for secondary schools which would arise in 1953 and after. Authorities are free to choose any method of construction ; the Ministry's role is confined to encouraging the production of systems which can be profitably used where site labour or traditional materials are scarce.

Earlier, of course, the initiative had been taken by a few local education authorities on their own. Hertfordshire in particular had a new technique of construction which halved the builder's site labour requirements. Very few authorities, however, have had the time and manpower necessary for development work, so the Ministry of Education decided to collaborate with local education authorities and with manufacturers in the design of four systems of construction.

The objectives of each of these development projects are the same ; namely, to devise a labour-saving system of construction, which should be comparable in cost with any other method of building of similar quality, and capable of being used for three- or four-storey building. A variety of materials was deliberately chosen, so that all the eggs should not be in one basket and so that production capacity could be obtained from very different sources.

In each case a school is being used as a vehicle for development, and it is governed by the same rules of accommodation, cost and procedure as any other job. The first project, undertaken jointly with the Berkshire County Council and Messrs. Hill's of West Bromwich, has just been completed at Wokingham. This comprises a multi-storey 3 ft. 4 in. module version of the system originally developed by Hertfordshire.

The second, with a cold-rolled steel frame and stone-faced concrete and asbestos cladding, is being developed in conjunction with the Derbyshire County Architect's Department and Messrs. Brockhouse Engineering Co., Ltd. This system is also on a 3 ft. 4 in. module. Work on the site began in May, 1953.

Aluminium is the basic material for the third system, which is being developed by the City Architect's Department, Coventry, Messrs. Sheppard and Partners [*FA*], the Bristol Aeroplane Co. and ourselves. The module here is 4 ft.

Finally, we have embarked on a technique whose frame is wholly made up of precast, post-tensioned, reinforced concrete units. It embraces four-storey construction, is on a 3 ft. 4 in. module and is

being carried out in association with the Borough of Worthing, the County Architect of West Sussex, Messrs. Gilbert-Ash and Messrs. Pre-Stressed Concrete, Ltd.

Our development work has not been confined to the structure. I have already mentioned the problem of designing to meet educational needs. Each of the projects described represents in its own way an experiment in school planning which is quite as important as its technical aspects.

Besides structural development, the projects have also included work on daylighting, lighting and heating installations, on lighting and sanitary fittings, ceilings and floor finishes, colour and so on. Continuous and invaluable inspiration in every aspect of this work has been provided by the Building Research Station, whose contribution cannot be too highly praised.

The Wokingham project has been described in detail in Building Bulletin No. 8, and similar Bulletins on the other projects will, I hope, follow.

It is proper to ask who pays for the development of a system of construction. In each case a local authority is paying the price and the usual professional fees of a normal school. The manufacturers incur the cost of developing their components and have all agreed to sell their components to subsequent local authority purchasers at the same price (subject to changes in cost of labour and materials) as they are charging for the development projects. Thus on the completion of a project, or even before, all the successful items developed and tried in it will be in production and on the market at a known price, extending the range of choice for local authorities.

In order to produce entirely new components quickly and at a reasonable price it has been necessary for quantity surveyors to develop a costing technique which enables the designer to control the cost of his article as he proceeds. This technique has been described in Bulletin No. 4 and it is sufficient to say here that we could not attempt development on any appreciable scale without it.

Before leaving the subject of the branch, may I sum up by saying that its main aim is to help local education authorities and their public and private architects to retain the initiative at a time when labour and materials are scarce, when prices are rising and when educational ideas are changing. Our slogan is value for money and if the administrator, the educator, the designer and the producer work closely and continuously together we know that we can raise quality without increasing cost.

All the indications are that if we are to continue to get higher-quality buildings, quickly and at a price the nation can afford, very much more development will have to be done. Almost everything we handle, from bath taps and basins through paints to whole systems of construction, is capable of really striking improvements in this direction.

The architect's contribution here is not confined to streamlining a manufacturer's existing product, but is that of a man who finds out the user's real need, and who by tradition and training is the only designer concerned with the whole building and therefore with the design and price of every component used in building. As such he can make a unique contribution if he is *jointly responsible* with the manufacturer for the design of industrial building products. Very few architects are engaged on this type of work and yet there is ample evidence to show that it cannot be wholly successful without their contribution.

It is intended to limit the amount of development work which we undertake by the present size of our branch, but even if it were physically possible it would be undesirable to concentrate too much of this work in one organisation. Local authorities with their large programmes—and therefore with considerable potential orders—provide another field in which development can be effectively undertaken, but too few of them have so far been able to spare their best architects to work exclusively on this type of work. The private architect can make a notable contribution; for example Richard Sheppard and Geoffrey Robson in aluminium techniques and S. Morrison in timber. But if more work of this kind is essential, as I believe it to be, it is worth examining the architect's terms of reference for this new role.

In its present form our code of professional conduct allows an architect to be employed by an industrial firm but forbids him to be a member of that firm. Where he is engaged in this way he usually finds that it is almost impossible for him to attain sufficient authority to be jointly responsible for the product he helps to design. Design cannot be relegated to a subsidiary role in any successful industrial firm. Design and policy are inseparable. In his present capacity the private architect's advice is sometimes taken but often ignored on grounds of policy or "sales." The result is seldom effective. If he is to play his proper role he must be allowed to be a true partner at policy level and this implies a far closer relationship with industry than is attainable by the private architect to-day.

If it is true that the building industry is technically 50 years out of date, then we must pass through a period of rapid and exciting change sooner or later. I believe that we have already embarked on the beginning of this transitional period. Unless the architect is in a position to take and hold the initiative throughout the field of design he is likely to find himself more and more unhappily placed. He will be unhappy not only because he will be forced to use techniques and components designed by other people—this does not matter from a national point of view—but because the tools of his trade will be indifferently designed.

It would be ironical indeed if we owed this state of affairs to the inhibitions of a code of professional conduct which denies half the profession the opportunity of taking a leading role in perhaps the most thrilling opportunity of regaining for our country the architectural position she held in the 18th century.

Post-War Development in School Design

By RICHARD SHEPPARD, FRIBA

I FOLLOW behind Mr. Johnson-Marshall. That has been the function of many of us in the last few years. His paper is, so to speak, the editorial to the unnumbered bulletin; editorials can be discursive, illuminating and witty, but the contributors coming after, borne down with facts and examples, must of necessity seem flat-footed and quotidian.

My task is to review the changes in planning, technique and design in school

The Falstaff Hotel, St. Dunstan's-street, Canterbury, with the West Gate in background.

buildings since the war. As you all know, these have been considerable, indeed revolutionary, when applied, as they have been, in only one field of building. More important for architecture, the methods now being developed for assessing the educational problem and the experimental techniques in executing it have laid the foundations for a new approach to building for a democracy. I believe this approach, when applied to other fields, may prove to be one of the most important developments in architecture. Certainly it is the only instance I can call to mind of a long-term, comprehensive study of all aspects of a design problem. This empiric approach has achieved substantial results already and I hope will be applied to other building types.

Mr. Marshall has sketched what might be called the quantitative aspects—the numbers of school places, the cost, the administrative background. I shall deal with the buildings, the problems of planning for teaching and movement, and with the formal aspects of design which arise from these conditions. I do not propose, therefore, to follow the obvious educational pattern by considering each different class of school separately—primary, secondary and so on—but to deal with the various activities in education and to relate these to building developments. Learning and teaching are—or should be—the basis of the design of school buildings, and this is the most significant difference between the pre-war and post-war periods.

THE PRE-BUTLER ERA

I think it is true to say that the design of schools was dominated by what might be called architectural considerations. The architectural features visually, and architectural principles technically, dictated the design. Both of these are abstractions derived from the study of irrelevant problems arising out of the interest the early Renaissance men took in perspective. They have no particular relation to school building. Thus circulation, the arrangement of corridors by which the teaching spaces were linked, was most carefully considered and the intersection of these received a visual accent. Where the two main traffic routes intersected was the tower, while the entrance hall received a special and often arbitrary architectural treatment. I say arbitrary because the occupants of the building, you will recall, entered and left through the lavatories.

There was one aspect here which is worth considering to-day. Such a school often had very definite individuality and character. The connoisseur of cinema construction can always tell an Odeon from a Gaumont; in the same way we knew when we were in Kent or Sussex. I doubt if we should know Hertfordshire from Derbyshire to-day, and a child moving from one to the other would probably see no difference. On the other hand such schools could easily be mistaken for convents or minor railway stations from their appearance. Not the least of an achievement since the war has been the development of a building type which can be identified as a school and nothing else.

A great many interesting and able experiments were made in this period—more often in building technique than in planning—and some really notable schools were erected, particularly in West Sussex and Middlesex. Such developments were less effective than they might have been because they were autonomous. A single authority, in carrying out its daily business, could not carry out detailed research into educational techniques and methods, school organisation and so on, on which such plans must rely if they are to be positive. The architects carrying out these experiments realised the difficulty of obtaining evidence and information from the educationists — even if such information was available in a comparative form there was no adequate means of disseminating it, as there is now through the Ministry of Education's bulletins.

The competition for school designs organised by the *News Chronicle* in 1937 was notable in many respects. For the first time, perhaps, the design of school buildings was thought sufficiently interesting to the public to warrant a national newspaper sponsoring a competition. For architects it was important in focusing attention publicly on the requirements of the children and teachers. Most of us who entered it bemused ourselves by working at circulation patterns and found out how little we actually knew about the activities in the classroom and elsewhere. Mr. Denis Clarke Hall won the major award largely by his conception of the classroom as a teaching space, and foreshadowed later developments. But this competition may be taken as illustrating the stage that was reached at this time, and the mere diversity of solutions is evidence of our confusion.

POST-BUTLER

After the war two factors combined to bring about radical changes in school-building programmes.

First, the Butler Act made the provision of accommodation for secondary education compulsory for all educational authorities. Before that individual authorities only provided such accommodation as each thought necessary and there were wide variations between one authority and another in the numbers of children receiving secondary education. The Act also extended the school age and gave additional educational facilities for both youths and adults. It also required authorities to produce long-term plans for dealing with their problems under the terms of the new Act. By creating new types of school—secondary modern, further education, comprehensive and so on—attention was directed to educational methods and techniques.

Secondly, the birth rate had increased dramatically and major population movements had occurred, with the consequence that large numbers of additional school places were urgently required.

The effect of this was to revive interest in school design problems and particularly in the provision of teaching spaces by methods which would not impinge too heavily upon the manpower and materials of the building industry. Two committees were established and deserve mention: the Wood Committee, which was set up under the aegis of the Directorate of Post-War Building during the war under the chairmanship of Sir Robert Wood; and secondly, after the war, a working party on School Construction by the Ministry of Education. Both these committees considered the problem largely with the object of treating teaching space economically in terms of labour and materials, and based their recommendations upon the classroom sizes laid down by the regulations. The result of this approach is to consider school design as a matter of the construction of rectangular spaces of uniform dimensions. It confines school development to activity within a *series of cells*, rather than to activity in the whole area of the building.

Useful space is the enclosed space—enclosed that is, within four walls; and unenclosed spaces are wasteful, uneconomical and unspecialised. The object of both committees was to reduce or eliminate them and in this they succeeded. Circulation areas were certainly reduced.

Both committees had unconsciously in mind a definite type of plan and design, and thought of a school building as being ideally of one or at most two-storey construction. In this light an attempt was then made (1945–47) to find a series of standard dimensions and structural units. Several of the larger authorities, facing building programmes of what the papers call "unparalleled magnitude," were extremely interested in the work of these committees. Altogether the way was cleared for a coherent development in planning and structure. The influence of their reports was considerable and some of the buildings they inspired are now in use. The principal architectural effect, apart from the one I have just mentioned, is that they led to more dispersed plans, to a greater separation of the different parts of a school—classrooms, assembly hall and so on.

PRESENT CONDITIONS

Three factors operate at present in the design of school buildings:—

(1) Increasing readiness of local authorities to experiment with new methods of construction and material and to consider their problems against a long-term background. This is partly due to scarcity of orthodox materials and labour and also to the need for speed of construction, particularly in new housing areas.

(2) Experimental attitude towards teaching methods and organisation of space. The demands for increased economy in space have stimulated development in this way and forced educationists to consider space in relation to the frequency and duration of use as well as to specialist requirements in teaching. Hence the conception of space for dual and multiple uses and the demand for flexibility in plan arrangements and construction.

(3) The experience gained in the design and construction of schools in the immediate post-war period. Most authorities are now reaping where they have sown and are beginning to profit by their earlier buildings.

The influence of the Ministry of Education must be mentioned for, by exhortation

and example, it has kept people thinking hard. By the publication of its bulletins it disseminates information and experiment in a comparative and coherent form, never achieved by any Ministry controlling building. It is an enormous task and the Ministry has courage and vision.

SCHOOL ELEMENTS

I intend to proceed from the particular to the general and to show, visually as far as possible, how the conception of the use of space within the school is changing, and is affecting the design of schools.

(a) *Classroom to Teaching Space.*—The most notable development to which almost everything else is correlated is in the conception of the classroom. The immediate post-war idea, shown in the reports I mentioned earlier, is of a room designed for aural instruction only. The blackboard forms the focus of the room, with the teacher's table and cupboards to one side and the desks packed in so as to allow a precise minimum area for access and no more. Because it is intended primarily for blackboard instruction it is well and evenly lit with a combination of side lighting from the main wall windows and clerestory. This conception is slowly disappearing. The classroom is no longer thought of as being only for blackboard teaching but rather for educational activity on the child's part. The blackboard is ceasing to be the focus and the room loses its directional quality.

Other forms of teaching demand different shapes. The lighting, while even, is no longer axial; the room becomes square or L-shaped ; its form is only limited by structural considerations. Total enclosure of the space may even be abandoned. All these different forms in themselves shape the plan ; clerestory or top lighting rigidly limits the type of plans, while types of classroom which depend on the use of light from two external walls increase the perimeter and again dictate certain plan and structural forms.

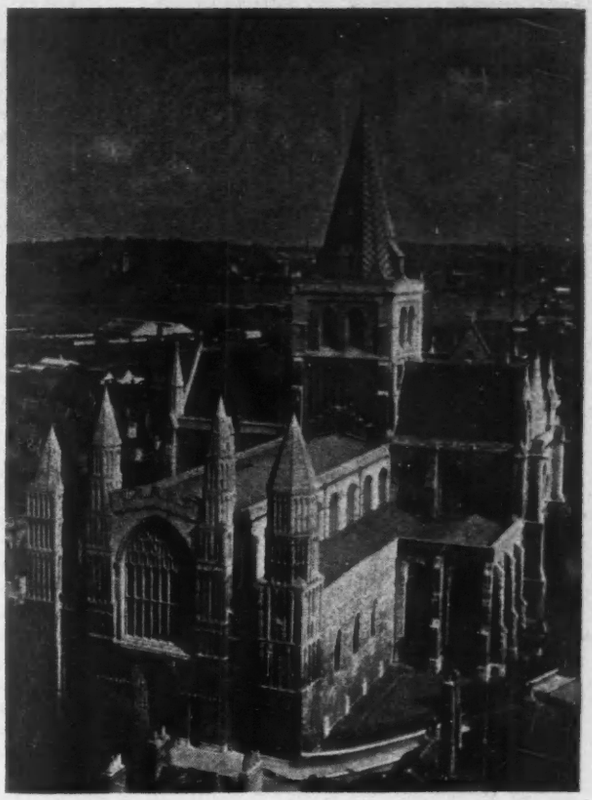
(b) *Assembly Halls and Large Enclosed Spaces.*—A very similar educational attitude is to be found in the evolution of the school hall for the same reasons. Multiplicity and spontaneity of use is leading to informality in the arrangement of space. In earlier halls the auditorium concept is dominant, with a proscenium arch, seating formally arranged and with a form giving good acoustic properties for stage and audience. It is, in fact, a small theatre, intended for assembly, drama and music.

In the later forms, while this type of use must still continue, greater allowance is made for group activities, music and dancing, games and entertainments. The hall is consequently being modified both in shape—the abandonment of the rectangle with one axis longer than the other, in proportion—and by a reduction in height. Above all, the auditorium concept is being broken down. Where a stage is employed it is regarded rather as giving the possibility of dual use simultaneously on two levels.

This brings about alterations in methods of daylighting. The upper part or stage must be lit and all parts of the hall require good light, preferably at lower levels. Hence the elimination of the formal frame of windows and the substitution of comparatively shallow strip lighting. The same occurs in artificial lighting and here the tendency is towards a larger number of fittings of low intensity.

Moreover the position o the hall in relation to the general organisation of the school tends to change. When it was regarded as a formal meeting-place it could be isolated in some position of special importance. When it is in constant informal use it must be closely related to the activities of the school. Perhaps we shall yet see the plan of the Middlesex School of 1909 revived.

(c) *Dining Space.*—This was a new problem after the war, since few schools had included a special space for it. First of all it was regarded as another formal enclosure, its size and shape based upon the number of children using it and the position of the servery hatches. Here economic considerations have somewhat altered the perspective and the use of so much space for a limited period only during the day has forced architects to develop it for other purposes. This again has led to a greater informality of spatial treatment and to less specialisation. It is used to give further space to the hall or as additional rooms for general purposes. Lighting is less important here and most authorities try to give this space a smaller scale and domestic atmosphere.



Rochester, Kent : the Cathedral.

(d) *Circulation and Entrances.*—There has been a continuous reduction in the amount of what we call circulation space. In the years before the war this sometimes amounted to 35 per cent. of the total area, while it was commonly 30 per cent. and over even a few years ago. Various attempts have been made to reduce it or to find some other use for so much area. Two methods may be observed: (1) Dual purpose. By using one side as cloak space or by using it for various forms of educational activity such as modelling or practical work. (2) By elimination and the use of teaching spaces for circulation. This is a reasonable proposal as the educational curriculum permits simultaneous movement but cannot be regarded as ideal.

At present it is possible to reduce this area to about 12-18 per cent. of the total. These reductions in circulation areas have been, I think, successful. They have reduced relative costs and have not reduced the efficiency of the school.

Of the two, the use foreshadowed by the Ministry's own school at Wokingham, where some circulation spaces are turned to practical purposes, appears to be the most promising. Also worth commenting upon is the decline of that traditional feature the ceremonial entrance, designed for use by governors and education officers but kept securely locked at all other times. This entrance, which was traditionally placed upon the main axis of the assembly hall so as to permit the easy entry of sacerdotal processions led by the Bishop in his mitre, has almost disappeared. Instead the entrance, which usually has doors of the same scale and type as in the rest of the school, leads directly into either the foyer of the hall or into the general circulation of the school. Its height and importance in formal terms have disappeared.

(e) *Trends.*—Summarising the tendencies which have appeared in recent plans, the following features can be observed :—

1. Spaces are less specialised in use and tend to be planned for more general use or for a greater number of uses. Instances of this which I have already noted are assembly halls and general teaching spaces which are used, particularly in junior schools, for both theoretical and practical teaching. In secondary schools too, this division is less sharply accentuated than before.

2. Simplification of specialist rooms. This is not much in evidence but requires serious considerations. Since the war the demands made by specialist subjects upon space—for equipment and storage—have increased and ought to be diminished. If girls are to be taught to cook—evidently necessary since their mothers can't—it is held that every type of cooker should be provided.

3. Reduction in overall areas of schools. Sufficient information has been given by Mr. Marshall on this subject. I would

only like to make one comment upon his remarks. The overall area required for educational purposes in relation to the number of children in the school is now all that is defined by the Ministry. This leaves the division of the space to the local educational authority and gives the architect an infinitely greater freedom in planning. With the co-operation of the educationist it should now be possible for him to experiment in terms of constructional technique with the spatial arrangements and for further advances in school planning.

At the same time we must be alert to see that this overall area is developed for maximum use. The area, measured in terms of space per child, is not large; ingenuity of arrangement which offers a lower area per child is often a specious advantage.

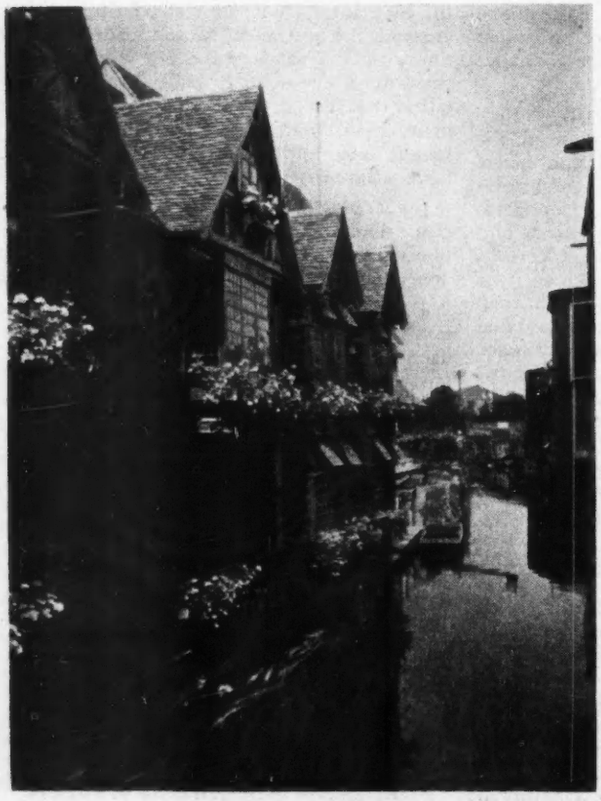
4. I should like also to make a plea for the reduction in size of school units. I do not think this need necessarily be achieved by smaller schools but by breaking down larger schools, if you like, into smaller self-contained groups. In this connection the house system developed in public schools and being adopted for State ones in comprehensive schools has great possibilities. I would like to see this system, by which theoretical teaching spaces, dining-rooms and so on are grouped in distinct and separate units, extended to all schools of 480 children and over.

5. A great deal of thought is being given to the arrangement and relation of spaces required for specialist teaching. Two approaches to the problem can be distinguished, one laying emphasis on the technical aspects and the other upon the educational. In the first case the aim is to group all the teaching spaces requiring special services into one group which is made as compact as possible. The laboratories or workshops requiring extra gas, water or electricity are grouped and the cost of the provision of such services is reduced. In the second approach technical and economic considerations are not allowed to dictate either the disposition of these spaces in relation to the rest of the school or the form and grouping of these spaces. In this way workshops for metal or wood may or may not be grouped according to the educational pattern.

6. A further and quite consistent development of what may be called the "technical" approach to school design can be seen in some recent schemes. In these the architect has considered the problem primarily for economic space enclosure. This is an extremely interesting and valuable approach; a school is seen as a building with definite requirements of lighting, services, and of fairly rigid space dimensions. This approach certainly would seem to lead to a high degree of economy since external perimeter walls, floors and roofs, etc., are reduced to a minimum in area and length. It may lead logically to spaces exclusively top lit, or lit by clerestory as in the American example. It may be contrasted with the opposite extreme—the practical rooms at the Ministry of Education's own school at Wokingham where educational requirements have led to the development of a looser arrangement of space.

EFFECT UPON DESIGN

I have dealt with the principal elements in a school building which go to make up the plan. But, as I have already said, a school is not the addition of a number of separate units, however excellent in themselves. A successful school building is one in which all the various spatial elements are related to the educational pattern. It is the whole plan, the whole design; a modification in the use of the classroom or teaching space will eventually lead to changes in the whole design. For the sake of clarity I have grouped these changes under two headings: (1) Changes in planning technique; (2) Changes in formal elements—design.



The House of the Weavers, overlooking the River Stour, Canterbury.

(1) *Changes in Planning Technique.*—The most notable change that has occurred since the war has been a continuous reduction in the overall spread of a school. What Professor Sir W. G. Holford, in another context, has called the plot ratio has sharply diminished. By reducing the extent of the perimeter walling, by the concentration of space within a minimum site cover, cost of building and services can be diminished. Mr. Clarke Hall has shown this dramatically in a diagram he showed recently.

This concentration has come about by the reduction of areas devoted primarily to circulation as well as by the adoption of multi-storey buildings—three and four and higher for secondaries, up to two for primaries. It has been found possible to achieve this concentration by the extended use of clerestory and top lighting and, in the case of higher blocks, by lighting from two sides.

I expect to see these tendencies carried a good deal farther yet. Concentration of space in recent plans has been achieved often without a reduction in the length of perimeter walls. I believe that a further reduction in cost and space may yet be achieved without the sacrifice of any amenity.

(2) *Formal Elements.*—I come at last to what we all, as architects, wish to achieve; good design for our buildings. The changes in technique I have noticed must have a considerable effect upon our attitude to design. It is no use our sitting back and thinking that the methods that achieved certain results in the past will also be valid if those methods are abandoned and others substituted. We do not have the same values and qualities at our disposal to-day and we must exploit different ones. While a very high level of planning and structural technique has been achieved to-day and was to be seen at the exhibition held at the Building Centre in February this year, the formal design of school buildings has not yet achieved the same high level. We have not yet exploited to the full the opportunities that are implicit because we do not always clearly recognise what these are.

Let me give a few instances of what I mean. If we are to make the fullest use of daylight by means of top lighting and clerestories, in order to achieve a greater concentration of space, we must abandon our traditional concepts of mass. London University, the Cathedral at Canterbury, obtain part of their effect by contrasts of mass; the tower of the university rises above the predominantly horizontal linear pattern of Bloomsbury. The towers of the Cathedral dominate and contrast with the not inconsiderable mass of the nave. This is a result which it is not possible to achieve if the main element in a school building is the glazed clerestory rising above the flat roofs surrounding it. Three dimensional ideas on the composition of mass will not help. We must learn to exploit the value of line—by the delineation of roofs and eaves and pattern by wall and glazing treatment. In the example I have chosen for illustration the designer has recognised this and emphasised it by colour.

Georgian precedents—the use of string-courses in contrasting materials, stone with brick—give us a clue to the solution of this problem.

Another example lies in the elimination of the wall as a supporting element. In practically all school buildings to-day the roof and floor loads are supported on a frame of some sort and the wall becomes a

weather-excluding skin, opaque or translucent as required. It is therefore useless to seek the same effects as were achieved when the interplay of solid and void in wall and window could be organised for proportion and pattern. Again, what can be achieved is use of line, the superimposition of the patterns inherent in glazing units and their expression. The blank window, without scale or interest, will achieve nothing. Architects have achieved much when this is recognised. In this school of Yorke, Rosenberg and Mardall the whole interest of the façade is concentrated on the expression of the opening units.

Another instance also arises out of the wall. The use of large-scale prefabricated panels usually means a loss of texture, though not necessarily a loss of pattern. No material has yet achieved the range or permanence of texture of brick or stone. But this can now only be obtained in rare cases and we must substitute the use of pattern where slabs are employed or embossed pattern in sheets, or where neither of these exist emphasis in the use of colour. I believe a part of the revival of interest in colour to-day comes from a realisation of this fact.

I have referred already to what might be called the " technical " approach to school design. The effect of a rigid and rigorous concentration on such aspects is to eliminate any smaller breaks or changes in the design—say from two to one storey—and to bring such limitations, even at some loss of convenience, into the larger frame of the whole school. Such examples as can yet be found of this approach make for a building of great formal interest. It is impossible not to admire the logical consistency of this approach even though one may doubt if it does not go too far in one direction—in giving a mechanistic expression to educational design.

This is an extremely important aspect—one which is bound to be of vital importance to us to-day, forced, as we are, by economic circumstances to increases in costs or reduced areas. It is one I think the Conference should consider.

CONCLUSION

The development of the school building programme since the war makes a very interesting study in architectural evolution in terms of social change. It is true that the scale is small and the perspective short, but I think it will be admitted that a comparatively small social change has already produced architectural consequences of some importance. A new pattern of education (the social change) has had a direct effect upon the use of space in school buildings and this has affected the spatial considerations and the plan ; in their turn, changes in plan have been achieved by the exploitation of constructional techniques. The full expression of these technical changes is leading us to rethink our ideas and concepts of design.

School design is probably the most vital and experimental field in architecture to-day. The empiric approach, engendered by the Ministry, has percolated through to us all and I think the results being obtained will rank with those of any country. I believe in school building we already lead the world.

CAN'T WE ALL GET TOGETHER ?

A Suggestion for Encouraging Collaboration within the Industry

By C. H. KITCHIN

I WILL sail under no false colours. If I did I should certainly be challenged and sunk. But even the layman may chance upon the germ of an idea. It is when he tries to dress it up in technicalities that he doesn't understand that he earns the name given to those who rush in where angels fear to tread, and I hope I have had enough experience as a layman amongst experts in the building industry to avoid that folly.

It is only on the authority of the most experienced brains, therefore, that I dare start by assuming that there is room for more collaboration between the professions, trades and specialists that go to make up a great industry. Only recently some of the best brains connected with the industry have been turned towards the problem of co-ordination in training between architects and builders.

I dared to consider this problem first when, with the diffidence of extreme ignorance, I accepted the task of directing a Ministry of Works region. Only the very informal—and quite erroneous—assurance that a Regional Director was a sort of person who sat at a large desk, which was empty except for his feet, and drank cups of tea, emboldened me to take it on. The staff was scattered over 16 houses and a radius of more than a mile, apart from those out-stationed in other towns, and they seldom met.

When I found what human and helpful people were the professional heads—architects, surveyors, engineers—upon whom I had to rely, I invited them to regular meetings to discuss progress and common problems. It was I who reaped the benefit of learning, but it was they who asked that the meetings should continue. One confessed that he had never before thought that the others might have problems impinging upon his own.

In the early part of the war I was responsible to a regional commissioner for the operation of civil defence in his region. It was at the time when to the fact of bombing had been added the very real threat of invasion. The Home Guard was well established and training hard.

The regional commissioner and his deputy were both distinguished soldiers. They saw at once that one of their most urgent tasks was to ensure mutual understanding and co-operation between the military and all the then more or less watertight compartments that went to make up what they called the " civil front." And not the least part of the problem was to get the civil front united.

Their first step was to encourage the formation of local defence committees under the auspices of the local authorities, which did much towards establishing liaison between the various groups. But it was a very long and scattered region and it was not easy to establish a common doctrine.

By a fortunate coincidence there had recently been a vast reorganisation and enlargement of the Fire Guard, which had involved training a great many fire guard officers in a short time. To do this we had set up a school in a former hotel at one of the seaside towns, and the job was just finished.

We kept the place on, complete with staff, stocked up the bar and invited all the civil and military organisations to send senior representatives for three-day courses, which consisted of the minimum of lecturing and the maximum of discussion. The bar ensured that discussion went on, with no formality, until closing time.

We mixed them well up: military (including Home Guard) officers; naval officers; chairmen of ARP and defence committees; fire officers; WVS; civil defence controllers and heads of services; food executive officers; police, and local authority officials, to mention by no means all. Within a couple of months the watertight departments were leaking joyously, parallel lines were meeting and all began to understand each others' problems. Mutual friendships sprang up and there was a new spirit of urgency.

As I, from outside, see the building industry, it consists and I don't pretend that the list is comprehensive—of architects, surveyors, engineers, contractors, sub-contractors, specialists, clerks of works, foremen and operatives. Wouldn't it be possible to bring them together in the same sort of atmosphere? And we might usefully add to the list builders' merchants, Government and local government officers who administer the still frustrating controls, and—yes—even some of us journalists who try to write about building.

I hesitate to call the establishment I propose a Building Staff College, because the idea of going back to school might frighten off some and offend the dignity of others, but I want it to serve the needs of the experienced and learners alike, and I can think of no better description.

I would take a large country house in pleasant surroundings, not too near a town that might offer counter-attractions; I would furnish it comfortably, but not so comfortably in the lecture or conference rooms as to provoke somnolence. A good bar would be essential.

Conferences and Courses

There would be held courses for those in an advanced stage of their training and conferences, lasting at least a week, for all who were far-sighted enough to come. The dominant aim would be to bring all branches of the industry together, to study, discuss and argue about each others' problems, not forgetting the representatives of the operatives.

My experience is that, provided the atmosphere is right, it takes a maximum of 48 hours at such an establishment to transform staid, responsible grown men of any age into light-hearted humans with all the returned instincts of school-boys. It is impossible not to learn from each other.

I suggest that the Director, or Commandant, should be a layman, who would be carefully selected for his experience of running similar establishments in other spheres. One might do worse than choose a senior officer of one of the fighting services. He would have professional men on his staff, drawn from the various branches of the industry. The prime function of the Director would be to create the right atmosphere and foster a happy spirit of co-operation. The professional staff would be the instructors for the courses and would guide discussion at the conferences.

If the scheme were successful, of which I haven't the smallest doubt, it might be repeated in every region. There is no reason why it should not be practically self-supporting, but a reasonable grant from the Treasury would be encouraging and money well spent.

DOCTORS' SURGERIES

The Need for Improved Planning and Design

THE Coronation number of "The Practitioner" is one of special architectural interest, for besides a pictorial record of buildings associated with British medicine, many of them distinguished and historic examples of architecture, it includes two articles of practical current interest, the first, entitled "The Doctor's Surgery," by Howard Robertson, ARA, PRIBA, and S. E. T. Cusdin, OBE, ARIBA, and the second on "The General Practitioner's Premises," by Michael Arnold, LRCPI and S, and John Ware, ARIBA.

Messrs. Robertson and Cusdin suggest that although it is hoped that the State will be able to provide sufficient health centres to create the new environment for the practitioner, there will still remain for a long time to come a strong case for enterprise by the individual doctor, or group of doctors; but unfortunately the lack of money, the uncertainty of the effects of the new Health Act, and building difficulties have made any attempt in Britain to establish new ideas in the planning of a surgery almost an impossibility. They turn, therefore, to the United States, where freedom from these obstacles and the competition of wealth and energy have given more scope for the testing of new ideas. They illustrate several plans for physicians' offices and clinics which show a great deal of concentration on planning within minimum spaces, which requires that the arrangement of all facilities must be decided in advance in a definite position, and they suggest that in this country more space and greater flexibility would be desirable.

They draw attention, too, to the range of diagnostic and treatment facilities which supplement the American doctors' surgeries—the lavishly equipped treatment room, laboratory utility room and fluorescopes which are provided—and ask whether, with the advantages which exist under the National Health scheme of having these extra diagnostic facilities available at the local hospitals and health centres, it will be necessary for the practitioner to have them also. They believe that there is a case for the provision of these facilities, no doubt on a more modest scale than the American one, in the modern plan for a surgery.

On the question of decorations, the authors stress the very real value of the humanities and the psychological importance of attractive and interesting surroundings, and record the case of the dental practitioner who discovered that a small tank of goldfish was the answer to distracting neurotic women patients from a too concentrated attention on their own woes! Finally, they emphasise the importance of separating the surgery from the residence.

Messrs. Arnold and Ware, in their contribution, deal usefully with questions of accommodation, lighting, heating, ventilation, acoustics, decorations and finishings, storage space, furniture and efficiency devices, and suggest that the general practitioner's premises invite the influence of contemporary design, both architectural and utilitarian. "Improved planning and more cheerful surroundings," they conclude, "must surely benefit both doctor and patient and enhance their working relationship."

The issue (price 7s. 6d.) contains several other practical articles on the equipment and servicing of surgeries.

SOCIETIES

NORTH WALES ARCHITECTURAL SOCIETY

Annual Meeting

REVIEWING the activities of the North Wales Architectural Society during the past year, the president, MR. L. MOSELEY, LRIBA, FRICS, said at the annual meeting in Bangor recently that the council had taken up with the Ministry concerned a report that when a local educational authority had asked for names of architects to be recommended for consideration for the design of a proposed new school, the Ministry had submitted the name of only one firm, thus giving the authority no choice.

The Ministry had admitted the facts to be true in this particular instance, although contrary to usual policy, and had stated that steps had been taken to prevent a similar occurrence in the future. "This," said the president, "is probably the most important achievement of the year in the best interests, not only of architects, but of the general public."

The president reported that arrangements were well under way, in conjunction with the North Wales Builders' Federation, to award diplomas for excellence in craftsmanship, the principal object being to revive and foster the art and pride of craftsmanship, particularly among the younger craftsmen and apprentices in the building industry.

Before the meeting, members and friends visited the cathedral where the Dean (Very Rev. J. E. Davies) gave an interesting account of the history of the cathedral and its possessions. Mr. A. D. R. Caroe, FRIBA, the architect in charge of the repair and restoration work, conducted the party over the building and described many points of special architectural concern.

INSTITUTION OF STRUCTURAL ENGINEERS

Election of Officers and Council

AT THE annual general meeting of the Institution of Structural Engineers, which was held on May 24, the following honorary officers and members of the council were elected for the session 1953-54:—President: Lieut.-Col. R. F. Galbraith, RE, MC, BSc(Eng), AMICE. Vice-presidents: Dr. S. B. Hamilton, ARCS, MICE; S. Vaughan, MICE; J. Guthrie Brown, MICE; Professor A. G. Pugsley, FRS, MICE; Professor A. L. L. Baker, MICE; and G. S. McDonald, MICE.

L. E. Kent, MICE, was elected hon. treasurer and J. Singleton-Green, AMICE, hon. secretary, with W. H. Woodcock, FCS, as hon. editor, F. R. Bullen, MICE, hon. curator, and Wallace A. Evans, hon. librarian.

New members of council are: D. H. New, MICE; John Mason, AMICE; T. Bedford, MICE; and A. P. Mason, MICE. Associate-members of council: D. T. Williams and H. V. Hill, AMICE. The new council takes office in October.

OBITUARY

Edmund Dulac

THE DEATH occurred recently in London of Mr. Edmund Dulac, who was best known as an illustrator of fairy tales and, more recently, as a designer of postage stamps. He was 70 years of age.

Dulac's connection with the Mint began in 1935, when his design for the Poetry Medal was approved. The Coronation stamps of 1937, bearing the heads of both King and Queen, were the first to be designed by Dulac, and they met with general approval. The range of stamps, from the 7d. to the 5s., printed in 1939 were designed by him. His success with postage stamps was due to his fine sense of scale and of balance in the design and the delicacy of his drawing. He rose admirably to his opportunities when invited in 1940 to design the stamps and banknotes of the Free French movement.

Dulac began to illustrate books in 1905, and for a good many years from 1907 onwards the original drawings for them were exhibited annually at the Leicester Galleries. The books were not all fairy tales, but it was in that connection that Dulac did his most characteristic work.

Clement O. Nelson, FRIBA

WE RECORD with regret the death, which occurred on May 26 at a Bournemouth nursing home, of Mr. Clement Osmond Nelson, FRIBA. He was 82 years of age. Mr. Nelson was elected an Associate of the RIBA in 1897 and a Fellow in 1951.

Charles E. Ball, FRICS

WE REGRET to record the death, which occurred on June 1, of Mr. Charles Edward Ball, FRICS, at his home at Barley, Royston, Herts. Mr. Ball, who was in his 76th year, founded the present firm of C. E. Ball and Partners, of Dilke House, Malet-street, London, WC1, in 1927, and was previously in practice for over 30 years in the firm of Adam K. Ball and Son.

The firm of C. E. Ball and Partners is being continued by the remaining three partners.

LOW-COST HOUSING IN INDIA

International Exhibition to be Held

LOW-COST HOUSING will be the theme of an international exhibition planned to be held at Delhi, India, in January and February next year, writes a correspondent. The exhibition, which is expected to create world-wide interest, will also include a Seminar on Housing to be held by the United Nations Technical Assistance Administration and a regional conference of the International Federation for Housing and Town Planning. The exhibition will be held at the site of the present railway centenary exhibition.

A ceiling price of Rs. 5,000 has been fixed for houses eligible for exhibition, though the aim will be to display cheaper houses than this. Most exhibits are expected to be full-scale model houses for rural and urban areas, which will be put up by, and at the cost of, participating governments or firms.

ASPECTS OF THE BUILDING REGULATIONS

Industrial Safety Conference

MORE than 630 delegates attended the 1953 National Industrial Safety Conference held at Scarborough from May 29 to 31. The conference was organised by the Industrial Safety Division of the Royal Society for the Prevention of Accidents, and a trade exhibition of safety appliances also took place.

The delegates were welcomed by the Mayor of Scarborough, and an opening address was delivered by LORD LLEWELLIN, president of the Society, who referred to the activities of the regional industrial accident prevention groups with regard to the training of young workers and apprentices in methods of safe working. Disquieting accident statistics for young persons had been contained in the latest annual report of the Chief Inspector of Factories, and the groups were endeavouring to reduce the number of accidents to youngsters. Lord Llewellin forecast the eventual presence in industry of a body of safety-trained adult employees.

Among the papers presented at the conference was one on "Aspects of the Building Regulations—the Operative's Point of View," by SIR RICHARD COPPOCK, CBE, HonARIBA, general secretary of the National Federation of Building Trades Operatives. Sir Richard's paper was read by Mr. Thomas Catto, an industrial officer of the Federation. At the outset the paper laid particular emphasis upon the individual responsibility of every employee with regard to his own safety. The regulations were such that they could be made more effective only to the extent that the operatives themselves observed them.

Scope for Improvement

While not abandoning hope of any improvement which experience might suggest, Sir Richard regarded the regulations as eminently practical. The ideal was what they strove after; the immediately possible was what they attained! The paper went on to discuss particular aspects of the Building Regulations in which Sir Richard considered that there was scope for further improvement. One regulation criticised by him was regulation 24 which laid down that the minimum height at which a working platform must be provided with a guard rail and toe board was 6 ft. 6 in. Whilst acknowledging that an arbitrary line had to be drawn somewhere, Sir Richard considered that the height specified tempted fate. Pointing out that men had been seriously and fatally injured by falls from lesser heights than 6½ ft., Sir Richard said that no one wished to impose impossible, impracticable, or unduly onerous conditions on the building industry, but there were still loopholes in the present regulations which were a potential source of danger to workmen. He also considered that the period of four years, within which a crane, grab, or winch must be examined in compliance with regulation 52(1)(a), was too long. The paper advocated the inclusion in workmen's pay packets of a summary, "in simple non-legal language," of safety precautions backed by the force of common-sense as well as those backed by the force of law.

Another paper was presented dealing with "Aspects of the Building Regulations—The Management Point of View," by MR. P. E. TRENCH, OBE, BSc, managing director of Bovis, Ltd.

Speaking of references to accidents in the building industry, contained in the latest annual report of the Chief Inspector of Factories, Mr. Trench thought these reflected seriously to the detriment of a great industry. The risk of an accident being fatal if it occurred on a building operation was about six times as great as it would be if it happened in a factory. The building industry had approximately one fatal accident for every working day of the year. Accident prevention in the long run was not bound up with law but with human relations, and a change of philosophy was required in the building industry.

The obligations of the employer and employee were laid down in regulation No. 4. The legal phraseology of the regulation as it stood in the Statutory Order was too long and complex. The first sentence extended over 20 lines of closely printed paper without a full stop, and was not the sort of instruction to issue to a general foreman already with enough on his mind. The object of the regulations was not to relieve the employer or the employee of the necessity of thinking for themselves. What was safe in one set of circumstances might be very dangerous in another. No regulations, Mr. Trench emphasised, could prevent accidents on a building site. They could only minimise the possibility.

Reasons for Accidents

Mr. Trench isolated two factors in the operation of the building industry which made it particularly prone to accidents. One was the continual turnover of casual labour, which resulted in the handling of the same operatives by both the employer who took accident prevention seriously, and the employer who was completely indifferent. The very temporary nature of many building contracts engendered a spirit of apathy towards accident prevention. The second symptom lay in the mistaken belief that to neglect safety precautions was financially more economical than to introduce them. This was largely due to the system of competitive tendering whereby costs were pruned to a minimum, and the more irresponsible element in the industry who considered that any addition to their price for such items as safety and welfare might be that relatively small sum of money which lost the contract. This was false economy. Employers' liability insurance premiums were directly related to the claims history of the policy holders, and these premiums constituted part of the overheads of a firm which must be recouped in the price of building. If the overheads could be reduced, so could the tender price.

It was his opinion that to succeed in reducing the accident rate in the building industry required more than compliance with the building regulations. An attitude must be engendered whereby these regulations were looked upon as minimum legal requirements and the legal, not necessarily logical or humanitarian, basis for a safety policy. There was a need for a three-pronged attack with the forces of management, the forces of specialists in accident prevention and the forces of organised labour. On the management side it was essential that the board of directors or its equivalent should give the lead to contract managers, and, through them and their assistants, to site office personnel. If there was a safety officer on the staff, he must have the confidence of the board, and be fed with specialist information and advice. He welcomed the formation of accident-prevention groups for building and engineering contractors and thought that this was a step worthy of universal approbation.

A number of firms were endeavouring to indoctrinate their apprentices with a sense of safety responsibility, and it was hoped soon to devise courses for foremen specifically on this subject. The idea of safety awards and bonuses had also been mooted. The occupier of a factory or works premises could help greatly by ensuring that he or his architect informed the builder, before pricing, of the circumstances in which they would have to work and the standards of safety required.

DEVELOPMENTS AT GATWICK AIRPORT

Committee's Reply to Ministry

A LETTER from the Ministry of Civil Aviation regarding the proposed development at Gatwick airport has elicited a reply from the Gatwick Protest Committee of the London and South-Eastern Regional Board for Industry. The committee states:—

The Ministry of Civil Aviation's latest statement on Gatwick airport is as conspicuous for its lack of candour as all those that preceded it. Thus, although the Minister on October 29 last promised, if requested by the local authorities, to hold a public inquiry, this is now said to be "under consideration," notwithstanding the unanimity of the request.

Although we were told six months ago that all questions of increased railway services had been settled, we now learn that "discussions are taking place." No mention is made of the £12m. required to enable even one extra train to run, nor of the artificial tunnel necessary to protect the travelling public. To avoid this the run-way would have to be realigned to bring planes in immediately over Horley, but the Ministry statement says "run-ways will be so placed . . . as to cause very little inconvenience to the main centres of population and industry."

Finally, the most delicate precision work takes place within a stone's throw of the proposed maintenance area. No "acoustic screens" can provide for the continuance of this work, and factories which were persuaded to come to Crawley New Town for peace and quiet will have to move elsewhere to find it.

HOUSING PROGRESS REPORT

Figures for April

THE HOUSING SUMMARY presented to Parliament as a White Paper* jointly by the Minister of Housing and Local Government and the Secretary of State for Scotland, shows that the number of permanent houses completed in Great Britain during April was 23,262 compared with 17,401 in April, 1952.

In the first four months of 1953, 92,693 permanent houses were completed compared with 71,010 in the same period of 1952.

* Cmd. 8853, Housing Summary, April 30, 1953. HMSO, price 2d.

Incomes of Council House Tenants

Allegations were made at a recent meeting of Wrexham Council that people earning £1,000 a year or more were living in corporation houses. Alderman H. Hampson declared that the Government's housing subsidy was never intended for that kind of tenant, nor was the rate levy intended for their benefit. A special meeting of the council is to be called to consider the whole position including the sale of corporation houses and the working of the "points" letting scheme.

LAW REPORT

Builders' Claim for Payment for Repairs Consequent Upon War Damage Upheld

QUEEN'S BENCH DIVISION

BEFORE MR. JUSTICE ORMEROD

Gilpark Builders v. Harrison and Kayne

MR. JUSTICE ORMEROD, in the Queen's Bench Division on June 5, gave judgment on preliminary issues in the action by Gilpark Builders, Ltd., of Barking-road, East Ham, against Harrison and Kayne, Ltd., boot and shoe manufacturers, of Kingsland-road, Dalston. Plaintiffs claimed £851 5s. 11d. in respect of the balance of an account for repairs consequent upon war damage to their premises.

Mr. John Bassett, QC, and Mr. M. J. Anwyl-Davies (instructed by Messrs. Stocken and Co.) appeared for plaintiffs; Mr. J. E. S. Ricardo (instructed by Messrs. David Morris and Co.) represented defendants. A third party, Mr. Cook, did not appear and was not represented.

Mr. Bassett said defendants admitted they instructed plaintiffs to carry out the repairs, but said that it was an express term of the agreement that all necessary work would be performed for the amount recovered from the War Damage Commission. They also said that, on plaintiffs' introduction, they employed Mr. A. Quinton Cook (the third party), an architect, to negotiate their claim and inspect and pass work for payment when satisfactorily completed. Plaintiffs, they alleged, wrongfully induced Mr. Cook to act as their agent in negotiating with the War Damage Commission and to have regard primarily to their interests when inspecting and passing work at the premises.

Defendants, Mr. Bassett said, admitted that they instructed plaintiffs to carry out certain work additional to the war damage repairs. Plaintiffs rendered an account for £404 5s. 6d., but they said that plaintiffs agreed to accept £150 in full settlement of any liability in respect of war damage or additional work.

Mr. Bassett, dealing with the issues for decision, said one concerned the £150 plaintiffs were said to have accepted in full settlement of any liability in respect of war damage or additional work. Plaintiffs denied they ever agreed to such a proposal. In March, 1951, Mr. S. G. Gilbert, a director of plaintiffs, was informed by defendants that plaintiffs had agreed to accept £150 in full satisfaction. Mr. Gilbert, in view of this, gave a receipt for this amount. Plaintiffs maintained that Gilbert had no authority to give the receipt, as there was no concluded agreement between plaintiffs and defendants with regard to this sum.

Mr. Ricardo said defendants asked for the court's ruling as to whether plaintiffs' failure to disclose to defendants any agreement they made with the third party, Mr. Cook, amounted to fraud.

Mr. Justice Ormerod, giving judgment, said he was asked to decide two issues. The first was whether plaintiffs fraudulently induced defendants to appoint the third party (Mr. Cook) to act for them in the proceedings before the War Damage Commission, in view of the fact that he was also assisting plaintiffs in some way.

"I have heard the evidence on both sides in regard to this matter," said his lordship, "and I have paid the closest attention to it. I am satisfied there was no fraudulent intention on their part and no fraud has been established against plaintiffs."

As to the other issue, whether there was an agreement under which plaintiffs accepted £150 in settlement of all outstanding work, his lordship said the £150 was undoubtedly paid by defendants to Mr. Gilbert, of the plaintiff company. Mr. Gilbert went to defendants to seek settlement of an account for approximately £404. He accepted the cheque for £150 and was under the impression that it was part payment of the £404. It would be strange if Mr. Gilbert accepted £150 in full settlement without consulting his fellow directors.

His lordship said he accepted the evidence of Mr. Gilbert on this matter, as no doubt he thought the £150 was a payment on account.

"I am satisfied," concluded his lordship, "that there was no discussion amounting to a final settlement between Mr. Gilbert and defendants, and the agreement is not binding upon plaintiffs."

Judgment was entered for Gilpark Builders, Ltd., on both issues, with costs.

His lordship ordered that the case be transferred to an Official Referee to deal with other matters raised in the action.

THE LIABILITY OF A CONTRACTOR TO MEN EMPLOYED BY A SUB-CONTRACTOR

Mulready v. J. H. and W. Bell, Ltd., and Others

A CASE of considerable importance in regard to the liability of a contractor to workpeople employed by a sub-contractor (reported in *The Builder* of May 29), was recently before the Court of Appeal, it being held that the contractors were liable to a workman employed by their sub-contractors who had suffered injuries as the result of a breach of the Building (Safety, Health and Welfare) Regulations, 1948.

Regulation 4 provides: "It shall be the duty of every contractor and employer of workmen who is undertaking any operation to which these regulations apply . . . (2) to comply with such of the requirements of . . . regulations 31 to 33 . . . as relate to any work, act or operation performed or about to be performed by such contractor or employer of workmen."

The plaintiff at the Manchester Assizes had alleged that the contractors (Bell) had failed to comply with regulation 31 which requires that where work is performed on the sloping surface of a roof and a workman is likely to slip and fall off, suitable precautions shall be taken to prevent his fall. He further alleged that a cause of an accident that befell him, resulting in the loss of a leg and other injuries when he fell some 70 feet from the roof of a building, was non-compliance with the above. The second defendants (the building owners), he alleged, were liable for a breach of duty under the Factories Act, 1937. The court, in the first instance, awarded him £8,500 damages against the contractors, but dismissed the claim against the building owners. The contractors now appealed.

Briefly, the circumstances were these:—The contractors contracted with the building owners to supply and fix metal sheets and install some ventilators on the roof of the latter's factory. Later, the contractors made an oral agreement with two brothers named Keating under which the contractors were to supply plant, materials and tackle for the job, while the Keatings (sub-contractors) were to carry out the work of fixing the sheeting and ventilators in position. The sub-contractors engaged the plaintiff as a sheeter's labourer to assist in the work.

In the Court of Appeal, the Lord Chief Justice read the judgment of the Court, and said that no precautions had been taken under the Building Regulations to prevent a workman from falling from the roof. It had been contended at the hearing that the work on the roof had been done by the Keatings and not by Bell, the contractors, and hence the latter could not be held liable for any breach of the regulations. Counsel for the contractors claimed there was no case where a head contractor had been held liable in such circumstances. The Lord Chief Justice pointed out that while that appeared to be so, neither was there any case which decided that he was not liable.

The Court of Appeal decided the case on the ground that the appellants (contractors) had agreed with the building owners to do the work on the roof and that it could make no difference whether they chose to do it by their own workmen or under a sub-contract. As they had undertaken to do the work and if they had not done it, or done it unsatisfactorily, the building owners would have had a remedy against them and not against the sub-contractors.

The duty, the judgment continued, was to provide suitable precautions to prevent men falling from the roof, and that duty was on those who performed the work, and could not be avoided by sub-contracting. He said that this principle had been clearly laid down by Lord Blackburn in *Dalton v. Angus* (1881) 6 App. Cas. 829. "A person causing something to be done, the doing of which casts on him a duty, cannot escape from the responsibility attaching on him of seeing that duty performed by delegating it to a contractor."

In the court below much had been made by the contractor's counsel of the point that if the contractors were held liable, the fact that a breach of the regulations was a criminal offence, would result in their being prosecuted and fined when the fault, of which they were not aware, was that of the Keatings. Lord Goddard pointed out that the fact that a contractor could obtain an indemnity from his sub-contractor for damages in a civil action, but not for any fine that might be imposed, only meant that the contractor should take care that the necessary precautions were taken by the sub-contractor if he (the contractor) did not take them himself.

The court dismissed the appeal on the ground that the appellants (the contractors) had agreed to do the work in question, but in doing it, had omitted the precautions and, hence, were liable.

The amount awarded by the judge at the Assizes, £8,500, were, however (with regret), reduced to £6,492 10s., the court pointing out that the general damages in this case were a great deal higher than in comparable cases. Leave to appeal to the House of Lords was refused.

N. P. G.

BOOKS RECEIVED

BOULLEE'S TREATISE ON ARCHITECTURE. Edited by Helen Rosenau. (London: Alec Tiranti, Ltd.) Price 21s.

THE CASTLES OF GREAT BRITAIN. By Sidney Toy. (London: William Heinemann, Ltd.) Price 25s.

MATERIALS HANDLING IN INDUSTRY. (London: British Electrical Development Assoc.) Price 8s. 6d.

DISTRICT HEATING

Utilising the Power Station

HEAT-ELECTRIC generation as a possible means of reducing the national consumption of coal, together with the economic and financial aspects of the problem, were discussed at the British Electrical Power Convention at Torquay on June 10, in a paper on "Combined Electricity and Heat Supplies," by Mr. H. S. Prosser, BSc, AMIEE, AMIMechE, of the British Electricity Authority, and Mr. A. W. Pedder, BSc, MIEE, MIMechE, consulting engineer.

As their basis of comparison for domestic supplies they took the fuel consumption per household for space and water heating at three tons of coal per year, which cost nearly £14, or about 1s. 7d. for each therm usefully employed.

They recalled that it had been suggested that new BEA power stations should be sited adjacent to areas suitable for the development of district heating schemes. While this would be technically feasible it was virtually impossible in practice, they said. To implement its plant extension programme the BEA had to concentrate its efforts on a small number of large power stations. District heating loads would have to be supplied by relatively small heat-electric stations at which generation of electricity would be a secondary function.

They analysed the cost of four different methods of providing district heating to groups of 2,000, 4,000 and 16,000 consumers (i) by heat-electric stations; (ii) by back-pressure turbines in a generating station; (iii) by steam bled from the turbines in a generating station; and (iv) by direct heat production. Their conclusions were:—

(a) District heating by heat-electric generation would economise in coal consumption only if a main power station were available as the source of heat supply. If a special heat-electric station had to be built, no coal saving would result, and with small schemes the consumption was likely to be somewhat increased.

(b) The annual cost to the consumer was from 50 per cent. to 100 per cent. more than with conventional methods of heating, depending on the size of scheme and method of providing the supply. However, the consumer received some three times more useful heat than with conventional methods.

(c) If the consumption per dwelling could be reduced by, say, half, by the introduction of individual metering or by reducing the standard of heating provided, the cost per consumer would be reduced by only some 17 per cent., due to the high fixed cost.

(d) District heating supplied by direct heating production would result in the consumption of 50 per cent. more coal than with conventional heating, and would cost the consumer at least as much and generally more than with heat-electric generation.

Having surveyed the economics of providing district heating to domestic consumers, the speakers then examined the problem as it related to the commercial user and the industrial user. In regard to the commercial user, they concluded that in spite of the very wide range of results it seemed reasonable to draw these general conclusions:—

(a) District heating from a special heat-electric station would result in a substantial reduction in the coal consumed as compared with individual heating.

(b) The cost per therm to the consumer would only be cheaper when a highly concentrated load was coupled with favourable distribution conditions.

(c) District heating supplied by direct heat production would effect no appreciable saving in coal consumption. Unlike the domestic case and due to the relatively low load factor of commercial supplies, it would usually be somewhat cheaper than supply from a heat-electric station though more expensive than supply from a near-by main power station.

With regard to the supply of heat to industry, they said that the economics of any centralised scheme of heat-electric generation were inevitably greatly influenced by the cost of distribution, but where this could be limited to reasonable proportions the result was comparable to heat-electric generation by the individual factories. Probably the greatest attraction of group schemes was that they presented a means of obtaining for the nation the benefit of the fuel economy associated with heat-electric generation in cases where the individual factories would not install back-pressure generating plant because of the difficulty of raising capital.

Recent Advances in Sweden

By J. GRINDROD

FOR a number of reasons, including fuel economy, the old smoke-dirt-and-fog-problems of established towns and the opportunity to take advantage of modern developments afforded by the new towns, district heating has not been without its publicity in recent years.

This subject has also come in for a good deal of attention in Sweden where, owing to climatic conditions and the ever-increasing demand for coal and oil for industrial needs, the annual bill for fuels, which must be imported, has put a great strain on the national economy. Fuel and the economic combustion of fuel have, therefore, become matters of vital interest to Sweden. Her combustion engineers, aided and encouraged by the authorities, have, for a number of years, been bending their energies to improving combustion plants and to developing more efficient insulation methods and materials, installation practices, etc.

Experiment and research have borne fruit in new conceptions and advanced methods, not only in industry, but in the field of domestic heating. One of the results has been the post-war development, in a number of Swedish towns, of large plants capable of providing many hundreds of apartments and other premises with their requirements in respect of central heating and hot water.

One of such installations recently completed is that which serves a new model residential district in the Stockholm suburb of Blackeberg. It consists of two plants of Gustavsberg boilers. One plant comprises five boilers, each having a capacity of 11,000,000 BTUs per hour, and provides heating and hot water for some 1,550 apartments and 130 commercial premises and garages.

Fully automatic, the plant is maintained by one engineer and an assistant. Recording apparatus provides permanent control of all factors bearing on fuel economy. The boilers are provided with rotary oil burners and coal stokers. The fuel used will depend on current market quotations for each. However, should the country's imported supplies of coal and oil be cut off at any time the boilers can be converted overnight to use such secondary local fuels as wood and peat.

During official tests under actual operating conditions the maximum efficiency of the boilers, when oil-fired, was 93.5 per cent. When stoker-fired with a rather inferior grade of coal 89.7 per cent. efficiency was recorded. These figures compare with only a few per cent. when wood or coal is burnt in an open grate, 50 per cent. conversion possibly achieved with a well-tended small domestic boiler and about 70-75 per cent. efficiency with a cast-iron apartment house boiler of the conventional type, though these, in many cases, waste heat through haphazard attention.

One of the features of the system is that the water leaves the boiler very much hotter than in a normal installation, the temperature varying between 185 deg. F. and 230 deg. F., according to heating requirements. It is conveyed by well insulated conduit mains in which it can be taken a considerable distance at the expense of only a few degrees of heat. In the houses the mains terminate in heat exchangers, which reduce the temperature suitably for radiator heating or domestic hot water.

The total economies gained by the installation of this plant have not yet been fully assessed, but it is estimated that the two units have released some 70 full-time and part-time boiler tenders. The saving in fuel is known to be very substantial.

Simple in conception, this type of district heating, in which boiler and mains pressures never exceed 60 lb. per square inch, depends a great deal for its efficiency on boiler design. During the war, when Sweden suffered from continuous fuel crises, boiler designers began to strike out in new directions. Using welded construction the units grew in capacity and the conventional boiler tubing was abandoned in favour of welded water chests. Boilers were also provided with fans to increase secondary air supply.

This phase in boiler design produced a number of new type boilers. One of the most interesting, and the type now installed at Blackeberg, is the Gustavsberg high-efficiency boiler, which, instead of an air fan, was provided with a high-capacity exhaust fan placed at the rear of the boiler. This exhaust fan speeds the combustion gases through a series of narrow flues between the finned water chests. By this means the gas velocity of the boiler was raised to 110-115 feet per second, and a highly efficient heat transfer was obtained between the combustion gases and the water. Since the specific load, or heat transfer per unit per hour, in the boiler can be substantially increased without any loss of efficiency, the boiler units can be made much smaller for a given capacity. Other benefits include the dust separation obtained by the exhaust fan and, since no natural draught is required for boiler operation, a substantial reduction in the size of the chimney stack is made possible.

Despite a smaller stack there is no smoke problem to cope with, even in the immediate district, and the Gustavsberg boilers can be installed in the heart of a residential area.

Post-war Swedish experience with this particular type of low-pressure district heating has increased the desire for even larger schemes. On the drawing boards are boiler units with a rated output of 32m. BTUs, and even more, for use with low-grade coals fed by travelling grates.

PRIVATE VERSUS COUNCIL HOUSES

Conflicting Views at Bromsgrove Inquiry

WHETHER a 400-to-600-house estate at Callowbrook, Rubery, should be developed by Bromsgrove UDC or by the firm of private builders that owns the major part of the land was argued at a recent local inquiry at Bromsgrove.

One of the principals of the firm of builders concerned—Messrs. A. and J. Mucklow and Co., Ltd.—accused the Council of "deliberately stifling" the enterprise of his business, which, he said, could easily outmatch municipal efforts in the building line. Bromsgrove UDC, he alleged, were only interested in £3,000-type houses being put up for the rich, and Council houses for the rest. He stressed his firm's record in building cheap houses for owner-occupiers—1,000 a year in 1938—and eventually threw down a challenge. If the Ministry of Housing would set him a progress target, he said, the firm would be willing that the first time they failed to keep pace the land should be given to the Council.

The challenge was not taken up, nor did MR. F. A. JESSOP, Clerk to the Council, cross-examine the challenger, Mr. Albert Mucklow. He contented himself by saying that the efficiency of the firm was not questioned, but the Council had a duty to provide houses for renting to people who did not wish to buy. There was still an unsatisfied demand from 605 local people in lodgings, and a further 1,245 houses had to be replaced as unfit for continued occupation. When all the land the Council now own had been built up, the deficiency would be reduced by 664, and that would leave some 1,200 still needed apart from further applications for tenancies which came in at the rate of 25 a month.

The land in dispute had a total area of 96 acres. The Council wished to acquire the whole area by compulsory purchase and five objections had been received. Of these only a Mr. Raybould and Messrs. Mucklow pursued their objection before the Ministry Inspector, Mr. J. M. D. Fairweather. Mr. Raybould was represented by Mr. F. H. Grove (Halesowen), and Mr. Mucklow had the support of Mr. Herbert Jackson, FRIBA, who collaborated with Sir Patrick Abercrombie in producing the West Midland plan.

On behalf of Messrs. Mucklow's, MR. JACKSON said that according to the County Plan Bromsgrove needed only 500 houses in 1951 to clear the waiting list and rehouse slum dwellers, and houses for 7,600 to meet population increases. Some 335 acres were said to be necessary for this purpose and 658 acres were available. He thought that the natural growth and slum needs could best be met in and around the town of Bromsgrove and mainly by State-aided housing. Immigration was most likely to be felt in Rubery and the rest of the northern part of the district and, as large areas of the Birmingham border land were being built up by the City Council, he believed the Callowbrook site should be used for the owner-occupier houses. Birmingham had overloaded its side of the boundary with Council houses which tended to create a large one-class urban sprawl, and privately-owned houses at Callowbrook would counteract that tendency.

MR. ALBERT MUCKLOW said his firm could develop an estate more expeditiously than any Council and were ready and waiting to go ahead at Callowbrook. Before the war they put in a plan for 890 houses there, and work was commenced on roads, sewers and houses. In April, 1952, they put in an amended plan for 434 houses and 9 shops, and then asked for an instalment of 30 licences, but they could not find out what had happened about it. He felt they had been prevented from going ahead for no valid reason, and that was disgraceful. They could build houses at £1,299, with £9 a year ground rent, for people of modest means who were willing to sacrifice a little to feel their homes were their own. In Halesowen, where they were helped and not hindered, houses were being bought as fast as they built them. Since February 18, well over 100 had been sold, but Bromsgrove was stifling the demand and forcing the middle class to live in subsidy houses whether they wanted to or not. He had been granted licences to build houses of 1,046 feet space for sale at a maximum of £1,750, but he actually charged £1,450. The Bromsgrove UDC seemed to say "You are a price cutter, go back where you came from. To kingdom come with the Minister's policy of free choice."

In answer to the inspector, Mr. Mucklow said he would not be willing to share his land with the Council. The two types of occupiers would not mix, but he would say right away he would give preference in sales to any Bromsgrove applicant.

REDEVELOPMENT WORK AT HULL

The Triangle Development Trust

[From A Correspondent]

THE sealing by the Hull Corporation of the contract and agreement of the Triangle Development Trust marks another step in the post-war redevelopment of the City of Hull. The buildings on the triangular site bounded by King Edward-street, Jameson-street and Savile-street were badly blitzed in 1941 and much of the area fronting to King Edward-street and Savile-street has since that time formed an unsightly open space in the centre of the shopping area. The redevelopment of the site as a whole as a block development to the requirements of the Corporation by the individual freeholders in co-operation is believed to be the first of its kind in the country.

Negotiations between the various owners and other parties interested in the area, including the Corporation, which is in fact the largest freeholder, have been going on for some time, and many problems have had to be solved. Before the war the area was in some places almost a jigsaw puzzle of irregularly shaped and interlocking sites, and it was realised reconstruction would have to be in conformity with a simpler and more practical layout.

The entire scheme of redevelopment will not be complete for many years, but when completed will form a compact whole fronting to King Edward-street from Victoria-square to Jameson-street, along Jameson-street and round the corner to include a small part of Savile-street. The centre of the site will form a car park bounded on three sides by a service road giving access from Savile-street to the rear of the buildings, the fourth side of the car park (which will be owned by the Corporation) being open to Savile-street.

In the redevelopment of this area the Corporation required that new buildings should be restricted to a built depth of 70 feet and that a car park should be provided in the centre of the site, with entry from Savile-street, and owing to the complex nature of the ownership of the various sites, it was at first thought that the only satisfactory means of redeveloping the site would be for the Corporation compulsorily to acquire the whole area and lease sites to traders on building leases, as has been done elsewhere. To avoid this and allow the freehold interests to be retained by the traders, a scheme was evolved broadly on the following lines.

A plan of redevelopment and site coverage was agreed with the Corporation, and such plan superimposed upon a plan showing the existing site ownership, which indicated what land in individual ownership had to be given up and what land could be redeveloped. It was evident that certain owners would be left with insufficient land to permit satisfactory and economic development, and that there was great disparity between the areas of land to be given up by individual owners to the Corporation to form the car park. Land values were therefore agreed by the owners, on a zonal basis, and these values were adopted, first for assessing the value of land to be exchanged between various owners in order to straighten up the boundaries of their respective sites, and secondly to assess the compensation payable to owners for land given up to the Corporation for car-park purposes. Further compensation became payable to owners of standing buildings, the sites of which will eventually form part of the car park and which are being conveyed gratis to the Corporation, who are to grant leases thereof to the occupiers for fixed terms at peppercorn rentals on the expiration of which such premises will be demolished and the major portion of the resultant sites will form part of the car park. A small portion of the resultant sites will be conveyed gratis by the Corporation to certain Jameson-street freeholders in order to permit, on redevelopment of presently standing buildings, a built depth of 70 feet to conform with the buildings now being erected on the King Edward-street frontage.

Full planning permission has been obtained and building licence for the total expenditure has been received (subject to capital allocation control).

CRICKET

National Federation v. Vitruvians

THE following XI will represent the National Federation of Building Trades Employers in the annual cricket match to be played against The Vitruvians, on the Richmond Cricket Club's Ground, Surrey, on Friday, June 19, at 11.30 a.m.:—

J. A. Bird (captain) (Liverpool), V. R. Blake (Eastern), A. E. Booth (Yorkshire), W. D. Bryant (National Federation), A. E. Carter (London), B. W. Gregory (Southern), C. F. Kidman (Eastern), V. Leader (Southern), P. H. P. Lovell (Southern), W. J. Munnion (Southern) and J. B. Riley (Midland); 12th man—P. J. Flitton (National Federation).

The Vitruvians' XI, drawn from the technical Press of the building industry, will be selected from: R. Dowson (*Architect and Building News*), R. Mudie (the *Architects' Journal*), W. A. K. Faldo (*Official Architect*), A. Watts (*Illustrated Carpenter and Builder*), F. H. C. Tatham, Alastair Boyd, Eric Chamberlain, Raglan Squire, J. Kennedy Hawkes, C. A. R. Norton, J. Linley and I. M. Lewis (*The Builder*) (captain).

PAINT-TESTING BY LCC

New Laboratories Now in Use

TO enable a systematic check to be maintained on the qualities of the 200,000 gallons of paint used annually by the LCC, the chemical laboratories at County Hall have been extended and re-equipped at a cost of about £2,000, and are now in use.

The Public Health Department's chief chemist, Mr. C. J. Regan, has for some years been responsible for testing paints used by the Council on its housing estates, schools and other establishments. The large quantities of paint now needed and the increasing complexity of materials used in manufacture have made it necessary to improve testing facilities and to instal modern equipment for measuring such qualities as weathering, hardness and anti-corrosion.

The new paint laboratory has been equipped to supplement the examination of decorative and protective coatings which has been made hitherto. The London County Council spends considerably more than £1,000,000 each year on its painting programme. The use of satisfactory materials is essential to protect the Council's properties. By the purchase of high-grade products only, considerable saving of money can be accomplished by reducing maintenance charges on repairs and to some extent by increasing the time before repainting.

The methods employed for the complete examination of a paint are many and various and must depend on the use for which the product is intended, e.g., a decorative coating or an anti-rust primer. The Council have issued the following technical notes on the laboratories:—

Paint-Drying Chamber.—This is temperature-controlled and, by means of a filter, dust-free air is passed in through the trunking from the corridor. This chamber is used for the drying of painted panels to ascertain the finish given by decorative paints and their times of drying. If bits and pieces should be present on the film they may cause the applied paint to fail fairly quickly as well as producing a poor appearance.

Accelerated Weathering Machine.—This is designed to produce the effect of years of exposure to the weather in a relatively short time. The paint film is exposed to the light of a carbon arc and water spray alternately during this period, with the consequent effects of heat and cold and wet and dry weather conditions. This is a good sorting test of the desirable and more durable products.

A specially pure water supply must be used for the weathering test. This water is prepared in the elaborate glass stills in the next laboratory and blown by a pressure of nitrogen to the top storage tank. This water comes into contact only with glass, porcelain and polythene because the presence of minute traces of some metals, especially copper, interfere with the test.

The Bend Test and the Scratch Hardness Tests together measure the essential properties of adhesion, cohesion and flexibility. The bend test places emphasis on flexibility and the scratch hardness tester on cohesion. These important qualities determine whether the paint film will crack, flake or remain sound when the inevitable expansion and contraction movements occur in the material painted. The scratch hardness test gives a reproducible record of the strength of the film to withstand accidental damage to the surface painted.

The Impact Machine.—This operates a falling weight on to the dried film and assesses the ability of the paint to withstand hard conditions of wear and tear.

The Humidity Cabinet measures the extent of corrosion under certain standard conditions and hence enables the comparative efficiency to be determined of paints designed to protect iron and steel work. Other corrosion tests are also made, e.g., in the salt-spray test, where standard spray conditions of sea-water are maintained.

The Opacity or Hiding Power.—This is measured because it controls the decision as to whether one or two undercoats are necessary to obliterate the previous surface. A high standard in this respect is necessary to keep painting costs as low as possible.

The Degree of Gloss varies from matt to an enamel finish and is important in itself; but the accurate measurement of the loss of gloss under standard conditions is one of the many aspects by which film breakdown can be estimated. Both hiding-power and gloss are measured electrically with photo-sensitive cells, the two determinations being made by methods having some apparatus in common.

Other tests include the *permeability of the paint film* to water vapour, *fineness of pigment, viscosity, density,* as well as methods for *producing a film of standard uniform thickness.*

The paint is separated into the three portions, oil-free matter (pigment), oil and thinners, and the chemical composition of the pigment is determined by spectrographic methods coupled with chemical analysis. A special dark-room is set aside for the former.

PERSONAL COLUMN

AYGEE, LTD., announce that MR. H. M. DALE, who has been their chief technical supervisor for a number of years, has been appointed area manager in charge of their Glasgow office as from June 8.

G. A. HARVEY & CO. (LONDON), LTD., Greenwich Metal Works, SE7, announce that MR. P. T. BLISS has been appointed sales director of the company. Mr. Bliss joined the company in 1909 and has been sales manager for a number of years.

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THE CEMENT SHORTAGE

New Ministry Circular

THE MINISTER OF HOUSING AND LOCAL GOVERNMENT has issued a circular (No. 38/53, dated May 29) to local authorities referring to the shortage of cement being experienced in some areas.

Steps have already been taken, states the circular, to improve cement deliveries, but during the next few weeks these may be below the full amount needed for the houses under construction.

The Minister hopes that authorities will instruct their officers to see that cement is used for only the most essential purposes and that even there it is used economically.

In particular, he suggests that housing authorities can relieve the situation by instructing their contractors, if they have not already done so, to make the maximum use of lime in mortar.

CEMENT PRODUCTION IN 1953

Keeping the Home Market Supplied

STEPS being taken by the company to keep the home market supplied with cement during 1953 are referred to by MR. GEORGE EARLE, CBE, chairman of the Associated Portland Cement Manufacturers, Ltd., in his statement to be presented at the company's annual meeting on June 25.

"It is our duty to keep the home market supplied, and for this reason we are importing cement from the Continent," says Mr. Earle. "We sell this cement at the home-trade price, which is still the lowest in the world, and as the selling price is considerably less than we pay, it is an expensive business.

"The export demand is still excellent, and fortunately the prices are good.

"It seems certain that we shall have to make every ounce of cement of which we are capable during this year.

"We have agreed to purchase the cement output of a new sulphuric acid-cement plant now being erected in Cumberland. This should produce 75,000 tons a year in 1955.

"Our production per man is better than ever before, and is close to the USA figure. As in this country only about 11,000,000 people out of the whole population are engaged in industrial production, the need for high efficiency is very great."

On the cement dust nuisance, the statement points out that the group has already, since the war, spent over £600,000 on dust-prevention devices.

STATE OF BRITAIN'S ROADS

Parliamentary Report Criticised

CRITICISM of the recent report on roads by the House of Commons Select Committee on Estimates was expressed in a message sent to the recent annual meeting of the Roads Improvement Association by Mr. Rees Jeffreys, the association's chairman.

In its report the committee stated that it had received no convincing evidence that the roads had so deteriorated owing to economy measures as to be an appreciable danger to users, or that their value as a national asset was seriously threatened. Mr. Jeffreys takes the view that this statement evades the real issue, which is whether adequate road space is being provided to accommodate the increasing road traffic, and that it is lack of road space properly laid out that causes delays and accidents.

HOUSES THAT SAVE SOFTWOOD

Reasons Behind Ministry's Experiment

LORD LLOYD, Parliamentary Under-Secretary of State (Welsh Affairs), opened, on June 8, eight demonstration houses at Cwmbran, Monmouthshire, which have been built by the Ministry of Housing and Local Government and the Cwmbran Development Corporation to show ways in which economies can be made in the amount of softwood used in house building. He said: "The Government are not asking local authorities or anyone else building houses to start cutting down the amount of timber they are using now, but they thought it would be worth while finding out what could be done if we were ever forced to make do with less. These things are not entirely in our own hands. We cannot alone settle the terms and the healthiness of international trade. We can only import if we can earn the foreign currency by our exports and any other services we can render abroad.

"The value of a demonstration like this is to get first-hand knowledge and working experience. It is far better than merely having paper plans or indeed no plans at all. Here we can see how the substitutes look. At the end of four weeks during which the houses will be open to inspection they will be occupied and we can then see how the materials stand up to wear and, most important of all, how people like them.

"Unfortunately the substitutes cost a little more than softwood. The facts are these. The houses which we are actually looking at to-day if built in groups of 50 or more would cost, on the estimates made by competent experts, from no more to £78 more than the average three-bedroom house now being built by local authorities.

"No one, of course, suggests that this extra sum, or indeed any extra with building costs inflated as they are, should be spent while softwood can be bought. But even taking the house which costs the most—the one costing £78 more—this still represents less than 5 per cent. of the total cost of a house at the present time. Even if we cannot advance from here and get the cost of the substitutes down, if we had another dollar crisis most people would be willing to pay an extra cost of less than 5 per cent. to provide the houses we need and to maintain a reasonable level of investment in the housebuilding industry.

"So the Government is not suggesting that houses shall be built more expensively with home materials while the cheaper imported article is available. We all hope we shall be able to buy more—not less—softwood, and all the other things we need from abroad. What the Government has done here is to carry out in a hard-headed way a practical experiment to show what the possibilities are. If this leads to nothing more we at any rate have the experience gained from the building and maintenance of these houses. If it leads to further experiments by enterprising local authorities we shall be still better off."

The houses are similar to those recently opened at Basingstoke.

Twenty-five Years a Chairman

For the 25th successive year, Alderman J. Clark, a builder, has been re-elected chairman of Wolverhampton Education Committee. He has been a member of the Wolverhampton Town Council for 41 years.

LMBA

The Queen's Thanks for Coronation Greetings

THE PRESIDENT of the LMBA, Mr. Gerald Hill, has received the following telegram from the Queen's private secretary in response to the message of congratulation which he sent on behalf of the builders of London on the occasion of her Coronation:—

> The Queen sincerely thanks you and the master builders of London for your kind and loyal message on the occasion of Her Majesty's Coronation.

Building Apprentices' Awards

THE MAYOR OF LEWISHAM, Councillor D. A. J. Draper, DFC, is to present the prizes won by apprentices in the LMBA's No. 4 Area at the area's half-yearly social in Chiesman's Restaurant, Lewisham, on June 17. Mr. J. A. Stocking, chairman of the area, is to preside, and among the guests, in addition to the president, Mr. Gerald Hill, will be the district surveyors of Bermondsey, Deptford, Greenwich, Lewisham and Woolwich, the heads of the building departments of the South-East London Technical College and the Woolwich Polytechnic, and the vice-principal of the South-East London Technical College.

The area prizes, each to the value of 2 gns., go to the best apprentices of the year in selected subjects, and awards are based on their work at the various schools of building in the area.

The prize-winners this year are: J. W. Fairbrass, carpentry and joinery, employed by Holland & Hannen and Cubitts, and attending South-East London Technical College; R. A. Burgess, plumber's work, employed by the Admiralty, also attending South-East London Technical College; and E. Tanner, brickwork, employed by Yeomans and Partners, and attending Woolwich Polytechnic.

Area funds, which all the LMBA's 11 areas have now started, are intended to supplement the LMBA Medal awards and the prizes which the LMBA gives annually to technical colleges and schools of building throughout London.

NEWS IN BRIEF

Working Rule Agreement

The London Working Rule Agreement for 1953-54 has been published in pocket-size booklet form by the London Regional Joint Committee of the National Joint Council for the Building Industry. Copies are priced at 4d. each, obtainable from 47, Bedford-square.

Employment in Building Industry

Employment in the building and contracting industries rose by 9,000 during April, to a total of 1,435,000, according to the Ministry of Labour and National Service. In the same period the total number of persons in civil employment increased by 82,000.

Assignment of Claims

A leaflet (Assignments 1) has been issued by the Central Land Board describing the provisions of the Town and Country Planning Act, 1953, affecting assignments of claims for depreciation of land values under Section 58 of the Town and Country Planning Act, 1947.

Coronation Honours

Included in the list of recipients of Coronation Honours conferred by the Queen (referred to in our last issue), were Mr. James C. Townsley, chairman and joint managing director of Dawber, Townsley and Co., Ltd., of Hull, who receives the CBE; and Mr. F. A. Oliver, general foreman, Turriff Construction Corporation, Ltd., of Croydon, Surrey, who was awarded the MBE.

Course on Saw Maintenance

The City of Liverpool College of Building, Clarence - street, Liverpool, 3, has arranged a full-time twenty-week diploma course in wide-band saw doctoring and machine maintenance designed for those engaged in the sawmilling and woodworking industries who are concerned with the conditioning and use of wide-band saws. The course provides a full range of instruction in the technology and workshop practice underlying the use and maintenance of such saws, and includes the principles of administration and costing relating to their operation. It will cater for (a) operative saw doctors; (b) those concerned with the administration of saw mills; and (c) machine operators who may be nominated by their firms. The course begins on October 12 next; the fee is £30.

Subsidy Policy and Birmingham Flats

A delegation from Birmingham Corporation was received by officials of the Ministry of Housing and Local Government on June 5, when the subject of the eligibility for subsidy of the tall flats being built by the Corporation was discussed. The Ministry's officials explained that they were bound by existing legislation in the matter of subsidies, but that they would be as sympathetic as possible in administering the regulations. Afterwards Ald. A. F. Bradbeer said that the authorised schemes would go on. These were: Tile Cross, where the first tenants are about to move in; Hawkesley Mill Farm, being built, where the full economic rent would be charged; and Crane's Park, for which the tenders had been passed. "If we do not receive the subsidy," he added, "we may have to scrap part of the plans for the building of further blocks of flats running to six or more storeys."

OVERSEAS BUILDING

[From Our Own Correspondents]

Burma.—Messrs. Blackwood Hodge and Co., Ltd., have secured a £600,000 contract for 40 Euclid tractors and scrapers and a fleet of rear-dump wagons to be used on the Burmese Irrigation Department's Yemathin District project. Work on this scheme, involving the construction of a series of 19 dams, commences next year and will take three years to complete.

**Nigeria.*—There is a considerable demand for prefabricated houses and buildings in Nigeria. The Lagos Executive Development Board, of Reclamation Road, Lagos, have always been interested in prefabricated construction and were the first to erect a prefabricated concrete house, for exhibition purposes, in Lagos. The Board are willing to examine and assist any firm or organisation producing houses using up-to-date methods, and if they are proved satisfactory and the prices are economic the Board has every intention of making use of this type of construction. It is understood that the Board has a housing scheme for some 900 houses, which it is hoped to proceed with in the near future. The Cameroons Development Corporation use prefabricated structures as stores, workshops, hospital wards and cattle-milking bails. The railways would not normally use prefabricated houses, but a small number, possibly about ten, are used by relaying and bridging gangs. The living accommodation, which is apparently intended for senior officers, should consist of a wide verandah, combined lounge and dining-room, bathroom and lavatory, detached kitchen, three-unit servants' quarters. Ease of erection and dismantling is essential. They are at present using wooden houses, which they estimate to cost £300 and to last ten years, and they would be interested to receive further details, to be submitted in particular regarding prices and costs, etc. United Kingdom manufacturers may wish to consider sending details of their buildings, including specifications, price lists, delivery dates and any other information to: (a) The Lagos Executive Development Board of Reclamation Road, Lagos, P.O. Box 907, and (b) The General Manager, Nigerian Railways, Ebute Metta. Any inquiries by telephone should be made to Trafalgar 8855, Ext. 2413.

Poland.—The reconstruction of the Warsaw Philharmonic Hall has been included in the State Investments Plan. The reconstruction plan and the credits for this purpose have been approved by Prime Minister Boleslaw Bierut, who is chairman of the Chief Council for the Reconstruction of Warsaw. The concert hall, which has great historical traditions, will be reconstructed according to old models and will have a seating capacity of 1,100. It will have the most up-to-date equipment. The hall is to be completed by autumn, 1954, in time for the next International Chopin Competition. Reconstruction of the centre of the Old City of Warsaw, including the Old Market, is nearing completion. Plastering work on the old buildings is in the final stage. Artists will then begin their work of decorating the coloured façades of the buildings. Many of the houses will have the same designs as they had before the houses were destroyed during the war.

South Africa.—The South African Government is to embark on a plan to remove the "black spots" in and around Johannesburg. The City Council is to get financial support. Sites for building are being bought up in the Sophiatown native area by the Government. Building will be in three stages. The first building project is for Meadowlands, which is situated in Sophiatown. Houses will be built here to rehouse natives living in slums in other parts of the district.

Randfontein Estates have announced that arrangements are being made with the Atomic Energy Board of South Africa whereby the company will extend its plant for the treatment of uranium to accept uranium-bearing slimes produced at East Champ d'Or mine. It is estimated that the extension of the plant will be completed some time next year. Plans for the extension project are just being discussed.

Southern Rhodesia.—The architectural competition for new premises for the Salisbury Currency Board of Southern Rhodesia has been won by two Northern Rhodesian architect partners, Mr. W. G. Stenson and Mr. J. A. K. Hope, ARIBA. They were awarded the first prize of £750. The second prize of £600 was won by Mr. M. Belchamber, of Bulawayo, and the third of £350 by Ross Mackenzie, van Heerden and Hartford, of Salisbury.

One thousand cubic yards of grey granite from the Matopos will form the walls of the dignified building planned as an extension of St. Mary's Pro-Cathedral, the centre of Roman Catholic worship in Bulawayo. The new main altar will be backed by three tall stained-glass windows featuring the Immaculate Conception. These windows are being made by an English firm of artists in stained glass and will cost more than £1,000. It is understood that building may commence early next year.

The Premier Portland Cement Co., Ltd., is soon to erect a larger modern rotary kiln plant at its Bulawayo factory. With a fourth still larger kiln soon to be installed, the annual capacity of the factory will be in the region of 260,000 tons.

Four rival chiefs living in the Chiota Native Reserve of Mashonaland (once the scene of inter-tribal warfare) are competing to raise the biggest amount of money in a drive to find finance for the building of the Nyatime African College in the north-eastern corner of the reserve. This college, first of its kind to be built, will accommodate some 500 pupils.

It is interesting to note that building costs in Southern Rhodesia are now an estimated 15 per cent. lower than in the March, 1952, period. The National Building and Housing Board, in an interesting report which has been tabled in Parliament, adds that building costs will soon be down to an economic level. There are no serious signs of unemployment, and in fact the ratio of labour to work in hand is very satisfactory. During the period 1947 to 1952, no fewer than 14,548 permits, valued at £43,019,603, were issued. At the end of last year, organised industry had uncompleted work in Salisbury valued at £2,281,717, equivalent to 13 months' work. In Bulawayo the position was similar. At the end of last year the position regarding materials became completely free for the first time after many years of shortage.

Thailand.—The Thailand Ministry of Industries is reported to have under consideration the building of a factory to produce gunny bags. Site of the factory is said to be in the Nakorn Rajasima area and it will cost about £3m. Extensions are also planned at a factory at Nonthaburi in order to increase the output of similar merchandise.

The Government also has plans for the building of a harbour at Sriracha because there are fears that when the sand bar at the mouth of the Menam river has been dredged, Bangkok Harbour will not be able to cope with all the shipping that will call at the port.

Another venture of the Thailand Government is one which included Japanese participation. Six Japanese companies have been approached regarding the construction of a steel plant at Lopburi.

* From the Board of Trade Special Register Information Service.

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Partial Prestressing

The sole rights of exploitation in the UK for two patents (Nos. 541,835 and 554,693) for "partial" prestressing have been acquired by Stressed Concrete Design, Ltd. The first of these patents (541,835) refers to a combination of tensioned and untensioned wires. The second is concerned only with tensioned wires used as tensile reinforcement in prestressed concrete construction. These patents have no connection whatever with the Magnel-Blaton system of prestressed concrete which is also promoted by Stressed Concrete Design, Ltd., in the UK. The chief claim of "partial" prestressing is that it makes tensile stresses in the concrete permissible under design load. At the same time there is complete freedom from cracking, provided that the maximum tensile stress under working load is less than the modulus of rupture. Higher tensile stresses may be permitted where overloading occurs only rarely; in this case fine temporary cracks may develop under the additional load, but they will close immediately on its removal.

THE SCOTTISH BUILDER

Scotland's Housing in April

THE number of new houses completed in Scotland in April was 3,079, an increase of 1,079 over the same month last year, and 1,350 over April, 1951. These figures emerge from the latest monthly housing return issued by the Department of Health for Scotland and the Ministry of Housing and Local Government.

The total of new houses built in Scotland under the post-war programme now stands at 189,187 (157,011 permanent and 32,176 temporary). Each permanent house has been subsidised on the basis that it will have a life of at least 60 years.

Scotland's total in April of 3,079 new permanents includes 2,879 built by local authorities and the Scottish Special Housing Association, 150 by private enterprise, and 50 by Government Departments. In England and Wales, 20,183 new permanent houses were completed in April.

Licensing Planning Committee

LICENSING PLANNING COMMITTEES have now been set up under the Licensed Premises in New Towns Act, 1952, to consider what provision for licensed premises should be made in the two Scottish new towns. The Secretary of State has appointed Sir James Fiddes, CBE, formerly Actuary of the Glasgow Savings Bank, to be chairman of the East Kilbride Committee. At Glenrothes, the chairman of the Licensing Planning Committee is Sir George Cunningham, GCIE, KCSI, OBE, a distinguished former Indian civil servant now residing in St. Andrews.

These committees will consider from time to time, in the light of existing circumstances and proposed development, the requirements of their respective areas and, having determined what is needed, will submit proposals to the Secretary of State.

Clyde Tunnel Scheme

GLASGOW CORPORATION is to press the Government for a decision on the Clyde Tunnel scheme, part of the city's essential traffic arrangements. Boring work, approved after protests from the city at Government delays, have now shown that the proposed line of approach is sound. The city now wants to go on to the constructional stage, but faces repeated Government opposition, states a correspondent.

The scheme would carry a 75 per cent. grant, and it is this aspect which limits the prospects of an early start. Glasgow's view is that the tunnel is an essential north-south link to relieve congestion on river bridges. The original scheme proposed a twin tunnel with an incorporated water main. Since then, due to Government opposition, the essential water main has been taken to the point of a separate water main tunnel, leaving the road tunnel problem unsolved.

The city has now shown readiness to limit the road tunnel to a single unit with four traffic lines, two north and two south. The Corporation has appointed a delegation to seek appointments with the Minister of Transport and the Secretary of State for Scotland on the subject.

Festival Exhibition

THE WORK of Charles Rennie Mackintosh, the famous architect and designer, is to be the subject of a Saltire Society exhibition at Gladstone's Land during the Edinburgh Festival. The exhibition is being arranged by Dr. Howarth, of Manchester University School of Architecture, who last year produced a comprehensive volume on Mackintosh's life and work, and Mr. Robert Hurd, Edinburgh architect. It will include drawings, photographs, models, furniture, silver, decorations and paintings.

Housing Record at Paisley

PAISLEY has created another record for house-building. A block of four-apartment houses of non-traditional style has been built in five weeks and two days, it was announced recently by Mr. A. McGregor, Burgh Engineer, who said that even better time would have been achieved but for a delay in the work through vandalism. Commenting on the vandalism, Bailie Rae, housing convener, at a Press conference, said that the appropriate way of dealing with such offenders was to make them or their guardians pay the cost of making good the damage over a period.

Call for Census of Craftsmen

THE URGENT need for a census of our remaining craftsmen was stressed by DR. T. ELDER DICKSON, vice-principal of the Edinburgh College of Art, in an address to the Edinburgh Rotarians.

It was difficult to get accurate figures, but the position of the crafts in Scotland was undoubtedly grave and might be far worse than was imagined. In 1925 there were about 40 wood-carvers working in Scotland; to-day there were probably fewer than 20, most of them ageing. Only two apprentices were known. In 1925 there were about 100 wrought-iron workers; to-day there were probably fewer than 40, most of them doing industrial work.

"It amounts to this," he commented, "that in a few years' time if there is a return to more favourable economic conditions it will be impossible to provide those embellishments to our physical surroundings, to our homes, churches, public buildings and meeting-places. It will be impossible to get a decent bit of sculptured masonry, a decent bit of wrought iron, a decent bit of carved panelling, or hand-made furniture, because the designer-craftsmen are gone from the scene. What we shall do to keep our cathedrals in repair, heaven alone knows."

Only a census of designer-craftsmen working in Scotland to-day would give an indication of the present strength of our traditions. Until we knew how we stood we could only guess at the seriousness of our losses. Something, of course, was being done to revive the crafts, but largely by private individuals. The Edinburgh College of Art had set aside nearly £4,000 in the way of scholarships to encourage the study of the crafts. But what was most needed was work.

Conditions at Burnwood Camp

COMPLAINTS made by Mr. Patrick Maitland, MP for Lanark, to the Under-Secretary of State for Scotland about the condition of houses at Burnwood Camp, Carluke, led, on June 3, to a strong attack on Mr. Maitland by Mr. Edward Daly, chairman of the Housing Committee of Lanark County Council. Mr. Daly, who was drawing the attention of the county council to a report made after a joint inspection of the houses by representatives of the council and officials of the Department of Health, said that the report did not bear out statements made by Mr. Maitland which had been published in the Press.

The report said that, generally, the main complaints by the tenants were about the dampness which was in evidence in some houses, but was localised. Some tenants said that they had no complaints, and it was evident that complaints originated chiefly from a natural desire to obtain a new house.

The general conclusions from the visit were that the timber huts provided a reasonable standard of emergency accommodation and could continue to do so for the time being. Eight huts with concrete floors could not, however, be regarded as providing this standard, and the Department suggested that the council should consider whether these huts should be vacated. The council have agreed that the eight huts should be demolished when arrangements have been made to rehouse the occupiers.

Glasgow Clearance Proposal

A COMPULSORY ORDER is to be sought from the Secretary of State for Scotland for the demolition of about 200 houses, most of them "single-ends," in the Gorbals area of Glasgow. Although the houses come within the Hutchesontown redevelopment area, the present proposals are limited in scope and, in the eyes of members of Glasgow Housing Committee, do not represent at this stage any real slum clearance scheme.

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NEW BUILDINGS

Ayr.—Plans in hand for 32 houses to be erected at the Westend Craigie housing site, for which the architects are Cowie & Perry, FRIBA, Wellington-sq., The Sandgate, Ayr.

Ayr.—Plans in hand for blocks of houses to be erected at Chalmers-rd. housing site, for which the architects are Stevenston & Fergyson, ARIBA, 20, Wellington-sq., The Sandgate, Ayr.

Fife.—Fife County Road Board approved the engagement of an engineer to design a bridge over the river Leven within the designated area of the new town of Glenrothes. The bridge, 20 ft. high, will have a 90-ft. span, and is estimated to cost £25,000.

Glasgow.—The Western Reg. Hosp. Brd. in Glasgow has approved a basic plan for the modernisation of laundries at the many hospitals in the area. Total cost of modernising and re-equipping will be about £150,000 and will include alterations to premises, plant and heating equipment.

Glasgow.—Plans prepared for memorial halls to be erected at Knightsbridge-dr., for which the architect is William Barr, 152, Clarkston-rd., Cathcart, Glasgow, S.

Glasgow.—Plans in hand for new Housing Department workshops, etc., to be erected at Lochar-cres.,

for which the architect is Archibald G. Jury, FRIBA, Housing Offices, Glasgow Cross, The Trongate, Glasgow.

Glasgow.—Plans are to be prepared for scheme of 50 houses for the county and city of Glasgow police, for which the architect is Archibald G. Jury, FRIBA, Housing Offices, Glasgow Cross, The Trongate, Glasgow.

Glasgow.—Plans prepared for alterations and additions at Buchanan-st., for Insurance Offices, for which the architects are Ramsey, Murray & White, FRIBA, 32, Wigmore-st., London, W1.

Glasgow.—Plans prepared for new canteen and other additions by their own architects to be erected for Blair's, Ltd., Woodville-st., Govan, Glasgow.

Lanarkshire.—Plans to be prepared for a proposed new Protestant Public School, for which the architect is Thomas Cordiner, ARIBA, Blythswood-chbrs., 261, West George-st., Glasgow, WC2.

Lanarkshire.—Plans are to be prepared for The Scottish Special Housing Association, Ltd., for a new scheme of Larkhall houses, for which the architect is J. Austin Bent, ARIBA, 15-19, Palmerston-pl., Westend, Edinburgh.

Mid Lothian.—Plans are in hand for a new General Hospital for the South-West Reg. Hospital Brd., which is to be erected at the Mortonhall estate, Edinburgh, and for which the architect is J. Holt, FRIBA, 11, Drumsheugh-gdns., Westend, Edinburgh.

Rutherglen.—A. G. McFadden & Co., Ltd., steel merchants, are to undertake a three-phase extension and modernisation scheme at a cost of £30,000. The development involves demolition of older buildings and replacement by modern erections over handling plant.

The Builder

FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JUNE 16.

***†Durham CC.**—Farmhouse and steading, Church Farm, Evenwood. County A, Durham.

***†Enfield UDC.**—36 houses and 16 flats at Bycullah House estate. E&S. Dep. £2 2s. Tenders by July 3.

JUNE 17.

***†Essex CC.**—Erection of Hornchurch Dunningford primary school. County A, Chelmsford.

***†Plymouth City C.**—(1) Six flats at Grenville-rd., St. Judes; (2) two houses at Desborough-rd., St. Judes. City A. Dep. £3 3s. per scheme.

JUNE 19.

***†Hendon BC.**—Eight shops with maisonettes over at Claremont-rd., NW2. BES. Dep. £2 2s.

***†Sevenoaks RDC.**—Eight flats, 14 houses, Shoreham. E&S. Dep. £2 2s.

JUNE 22.

***†Birmingham City C.**—Ten flats and 10 houses on various sites. City E&S. Dep. £2 2s.

***†Bromley BC.**—Nine flats at Longfield site, London-rd. BE. Dep. £2 2s.

***†East Suffolk CC.**—Four flats, 2 Mendlesham and 2 Hollesley. County A, Ipswich. Dep. £2 2s. each.

JUNE 23.

***Herne Bay UDC.**—Repair works, King's Hall. E&S.

JUNE 24.

Aylesbury TC.—14 dwellings on three sites at Southcourt housing estate. Raymond C. White, architect, 4, Temple-sq., Aylesbury. Dep. £3 3s.

***†Trent River Board.**—Laboratory and caretaker's flat at Meadow-la., Nottingham. J. Hirst, clerk of the Board, 206, Derby-rd., Nottingham. Dep. £5. Tenders by July 13.

JUNE 25.

***†Islington BC.**—70 dwellings on the Mildmay centre site, Newington Green-rd., N1. TC. Dep. £3 3s. Tenders by August 12.

Truro CC.—23 houses at Malabar housing site. City E&S, Municipal-bldgs., Truro. Dep. £2 2s.

JUNE 26.

***Acton BC.**—12 lock-up garages at Valę estate. BE.

JUNE 27.

***Ripley UDC.**—Eight garages, Elms depot. H. Hillier, S.

JUNE 29.

***†Merton & Morden UDC.**—12 flats, West Barnes-la. E&S. Dep. £3 3s. Tenders by July 24.

Ossett BC.—44 houses on six sites. BS, Town Hall, Ossett.

***Weymouth and Melcombe Regis BC.**—18 houses, Chapelhay estate. BE&S, 6, Pulteney-bldgs. Dep. £2 2s.

JUNE 30.

Falmouth TC.—Eight flats and 9 bungalows on the Beacon Camp and Penwerris housing sites. BS, Municipal-bldgs. Dep. £3 3s.

Kesteven CC.—Police houses on three sites. County A., County Offices, Sleaford.

***Southend-on-Sea BC.**—Erection of No. 4 garages on Industrial Estate. Boro' A. Dep. £2.

JULY 1.

***Chingford BC.**—24 houses, Gommes Farm. BE. Dep. £2 2s.

***Deptford BC.**—Three houses and 4 flats, Napier-st., SE8. BE&S.

JULY 2.

Newcastle-upon-Tyne CC.—(a) 102 houses in group 1, section "A"; (b) 119 houses in group 2, section "B." City A.

JULY 3.

***East Riding of Yorks CC.**—County primary school at Leconfield, near Beverley. County A, Beverley. Dep. £2 2s.

***High Wycombe BC.**—106 dwellings, Hatters Farm housing estate. J. A. Parkinson, BE. Dep. £2 2s.

***Walsall BC.**—Four dwellings, Bath-st. TC. Dep. £2 2s.

***West Riding CC.**—20 police premises on various sites. County A, "Bishopgarth," Westfield-rd., Wakefield. Dep. £2 2s.

JULY 4.

Golborne UDC.—32 houses and 10 bungalows at Culcheth. E&S. Dep. £5 5s.

***Saffron Walden RDC.**—Six bungalows, Quendon and Rickley. C.

JULY 6.

Saddleworth UDC.—104 houses and 12 flats at Carr Barn estate, Greenfield. Howard & Benson, chartered architects, 88, Mosley-st., Manchester 2. Dep. £2 2s.

JULY 8.

***Bromsgrove UDC.**—20 houses at Charford estate, section 9. E&S. Dep. £3 3s.

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London Flooring Co. (Reading) Ltd.
Macdougall & Son Ltd., Glasgow
National Flooring Co. Ltd.
New Floor Installations Ltd.
N. Jack & Co., Newcastle
N. Wales Floorings
Sherwood Floors Ltd., Nottingham
South Western Flooring Co. Ltd., Totnes
Zeta Wood Flooring Co. (1910) Ltd.

***Sherborne UDC.**—30 houses, Harbour-rd.. Petter Warren & Roydon Cooper, The Old Oxford Inn, West Hendford, Yeovil. Dep. £5.

JULY 15.

***Strood RDC.**—148 houses at Bells-la., Hoo. E&S. Dep. £5 5s.

JULY 20.

***Lincoln City C.**—Three cottages at Greetwellgate. City A, Stamp End, Lincoln. Dep. £2 2s.

JULY 22.

***Saffron Walden BC.**—(a) Six pairs of houses and (b) road and site works at Little Walden; (c) 5 pairs of houses and (d) road and site works at Sewards End. BE&S. Dep. £2 2s. per set.

NO DATE.

***Basingstoke BC.**—Seven aged persons' dwellings at South Ham site. Boro' A. Dep. £2 2s.

Wales Gas Board.—New permanent showroom and offices at Swansea. Manager, Swansea Undertaking, Wales Gas Board, Oxstermouth-rd., Swansea. Dep. £4.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

JUNE 22.

***Shrewsbury BC.**—External painting of 333 houses. J. Ambler, Acting BS.

JUNE 25.

***Birmingham City C.**—Stripping and re-covering of roofs of various properties. Housing Manager, 19-29, Summer-row. Dep. £2 2s.

JUNE 26.

Heston and Isleworth BC.—Domestic hot water installations to council houses on various sites. BE&S. Dep. £2 2s.

JUNE 29.

***Aylesbury BC.**—Internal decoration, Town Hall. BE&S. Dep. £2 2s.

***St. Helens EC.**—Heating and electrical services, Parr Flat infants' school. B&WE. Dep. £1 1s. each.

Shoreditch BC.—External decoration of Teale-st. and St. Leonard's dwellings. BS. Dep. £2 2s.

JULY 1.

***Potters Bar UDC.**—External redecoration of 117 houses at Cranborne estate. E&S, Wyllyotts Manor. Dep. £1 1s.

NO DATE.

***†Rickmansworth UDC.**—Repairs to war memorial. E&S.

ROADS, SEWERAGE AND WATER WORKS

JUNE 25.

Harrow UDC.—Roads and sewers at housing estate off Latimer-gdns., Pinner Hill. UDC E. Dep. £2.

JUNE 26.

Bristol City C.—Roads and sewers at Eastwood-cres. housing site. City E. Dep. £2 2s.

Gloucester City C.—Approximately 2,000 yds. road and 4,100 yds. sewers at Stroud-rd., housing site No. 22. City E&S. Dep. £2 2s.

Staffs CC.—Resurfacing of approximately 26,000 sq. yds. and final surfacing of approximately 23,000 sq. yds. on A4123. T. Evans, Clerk of the CC, Stafford. Dep. £5 5s.

Sutton Coldfield BC.—Roadworks at Falcon Lodge estate, paving contract No. 3. BS. Dep. £3.

JUNE 29.

New Hunstanton UDC.—Extension of sea wall and promenade by approximately 950 ft. Chief E. "Elmhurst," Brooklands-ave., Cambridge. Dep. £3 3s.

JUNE 30.

Ealing BC.—Carriageway surfacing works within the borough, covering approximately 29,000 sq. yds. BE&S. Dep. £2.

Witham UDC.—Laying and jointing of approximately 1¼ miles pipes. Pick, Everard, Keay and Gimson, engineers, 6, Millstone-la., Leicester. Dep. £2 2s.

JULY 1.

Luton BC.—Resurfacing of London-rd. and High-st., Leagrave, total 13,250 sq. yds. BE. Dep. £2 2s.

Melford RDC.—Provision and laying of 1,860 yds. asbestos-cement piping at Withermarsh Green, contract No. 9. Elliott & Brown, engineers, Stanley House, Pelham-rd., Nottingham. Dep. £3 3s.

Staines UDC.—Making-up of Wheatsheaf-la., Fontmell-park, Orchard-cl., Tothill-st., Gordon-cl. and Knowle Park-ave. E&S. Dep. £2 2s.

JULY 2.

Richmond (Yorks) RDC.—Laying of approximately 3,400 yds. sewers and construction of small sewage disposal works at each of Hudswell and Newsham villages, contract No. 1. A. Brooksbank, MICE, 14, The Exchange, Bradford. Dep. £2 2s.

JULY 3.

Heywood BC.—Supply and laying of approximately 11,000 sq. yds. asphalt on existing setts on Route A58. BE&S. Dep. £2 2s.

JULY 6.

Blofield and Flegg RDC.—Construction of about 4,800 yds. water mains, contract No. 3 of Rollesby water supply. J. Taylor & Sons, engineers, Artillery House, Artillery-row, Westminster, W1. Dep. £5

Tees Valley Water Board.—Laying of approximately 2,070 yds. of water mains at Billingham. T. Winter, E & General Mgr., Corporation-rd., Middlesbrough. Dep. £2 2s.

Wallasey BC.—Site preparation at Leasowe estate, site P6. BS. Dep. £2 2s.

JULY 10.

Rugby RDC.—Approximately 3½ miles of water mains at Withybrook, contract No. 9. J. D. & D. M.

Watson, MM.ICE, 18, Queen Anne's-gate, Westminster, SW1. Dep. £10 10s.

JULY 13.

***Cuckfield RDC.**—Site preparation, Hassocks housing site No. 3. A. Hutchings, E&S. Dep. £2 2s.

AUGUST 15.

†Republic of India (Ministry of Defence).—Contract No. 1 of the development of the naval dockyard at Bombay. Sir A. Gibb & Ptnrs., engineers, Queen Anne's Lodge, Westminster, SW1. Tenders by September 30.

GENERAL BUILDING WORK

(LONDON)

Harrow. — FLATS. — UDC surveyor, J. H. Melville Richards, proposes the erection of 36 flats at Elm Park-rd., Pinner.

Leatherhead.—HOUSES.—UDC recommended to acquire land near Bramley-way estate for the erection of 153 houses.

Richmond.—FLATS.—TC are recommended to acquire a site in Townshend-ter. for the erection of flats.

Woolwich.—SITE ACQUISITION.—BC recommended to acquire the following sites in the St. Mary's redevelopment area: Nos. 8-12 (incl.), Lord Warwick-st.; Nos. 2a, 2b and 2c, Paradise-pl.; Nos. 63 and 73, Lord Warwick-st.; Nos. 248, 262-264 and 266, Woolwich Church-st.; Nos. 76 and 76a, Kingsman-st.; Nos. 8, 9 and 11-16 (cons.), Marybank; Nos. 76 and 78, Lakedale-rd.; Nos. 7, 11, 13 and 15, Bostall-hill. The following requisitioned properties are also to be purchased by BC:—No. 21, Middle Park-ave. and No. 125, Upwood-rd. BE is to prepare plans for erection of 122 houses and flats on the Warwick-st. site.

(PROVINCIAL)

Altrincham.—TC propose 10 shops at Broomwood Estate.

Bangor.—Caernarvonshire EC propose new technical college near Friars School.

Barnsley.—EC to invite tenders for Athersley Sec. Mod. Sch., £181,000 est.

Bedfordshire.—County Planning Comm. have approved plans prepared by County A, S. V. Goodman, for new North Bedfordshire College of Further Education, estimated cost £500,000.

Bedlington.—UDC received sanction to build 108 houses at Grange Park. S, A. K. Dennis.

Billinge. — UDC approved plans for ambulance station at Upholland-rd., for Lancs CC.

Birmingham. — Hercules Cycle Motor Co., Ltd., propose extensions to factory at Salford-st., Aston, £36,000 est.

Birmingham.—Midland Motor Bus Co., Ltd., propose bus garages at Stafford and Wigston, nr. Leicester. Work to commence shortly on extensions to Evesham Garage.

Blyth.—Northumberland Welfare Com. approved building of aged persons' home. County A, C. C. Brown, Newcastle-on-Tyne.

Brierley Hill.—TC propose following houses in 1954 programme: 85 at Forge-la., Wallheath; 121 at Harrison-rd., Brierley Hill; 111 at Tack Farm, Wordsley; and 45 at Lower Bromley. Recommend that the following major housing schemes should proceed: 146 houses on extension to Market-st. site at Kingswinford; 100 houses at Birchtree Coppice site, Quarry Bank; 109 houses at Moor-st., Brierley Hill; 850 houses at Ashwood Farm, Bells-la., Wordsley; 60 houses at Church-st. site, Pensnett.

Bromsgrove.—UDC propose compulsory purchase of 96 acres at Callow-Brook, Rubery, for housing purposes.

Carlisle.—TC seek Min. approval for erection of crematorium, £45,000 est.

Chislehurst.—TC to build 98 houses at est. cost £142,049, at Edgebury Estate.

Coventry. — YWCA propose erection of 4-storey hostel at The Butts.

Darlington.—TC informed that M of T will allow proposed Feethams bus station scheme to go forward on modified scale. Boro' E, G. S. Short, asked to prepare detailed plans and specifications.

Darlington.—TC approved amended plan for three houses in Carmel-rd., for R. G. Oates, builder, King William-st., Darlington.—TC seeking loan sanction for £85,500 for erection of 58 houses and £154,500 for 108 " non-traditional " houses on Firth Moor housing site.

Derby.—TC propose erection of an abattoir at Rayneaway.

Douglas.—TC to consider financial scheme for proposed 92 houses and 24 flats, comprising scheme 5, on Willaston estate, est. cost £165,430.

Durham.—CC to build 16 police houses at Belmont. Plans by County A, G. K. Clayton, Court-la., Durham.

Easington.—RDC to build 34 houses at Wheatley Hill, 20 at South Hetton and 36 at Murton. R. Lumsden, surveyor.

Elland.—UDC approved layout for 78 houses at Thomes-st. Estate.

Felling (Co. Durham).—UDC approved layout plans for Vicarage Estate, Sunderland-rd., for Church Commissioners of England.—Architects' department of Montague Burton, Ltd., Hudson Road Mills, Leeds, to convert premises at High-st. into shop and seven offices above.

Gateshead.—Corpn. to build 150 " Dorran " type houses on various sites. Boro' S, A. McGregor.

Harrogate.—TC approved sketch plans for two-storey hostel for aged persons, £40,000 est.

"THE BUILDER" PRICES

BRASS AND COPPER TUBES

The Brass and Copper Tube Association has announced that in consequence of the fall in the market price of zinc basis prices are reduced as from midnight, June 8, as follows:—

	Reduced by per lb.	*Basis price per lb.*
Brazed brass tubes ..	½d.	34½d.
Drawn brass strip sections	½d.	33½d.

Houghton-le-Spring.—UDC received loan sanction for erection of 24 traditional houses and 20 Unity houses on Fence House estate.

Kidderminster.—RDC to support Worcester TC on proposal to erect crematorium.

Leek.—RDC approved sketch plans for 55 houses and 24 flats at Norton Green.

Maghull.—Homes for Epileptics propose as future programme holiday and convalescent home, adolescent homes, homes for aged and infirm, central store and medical block. Consultant architect, Felix Holt, Liverpool.

Maidstone.—TC received consent to borrow £175,000 to erect 118 houses on Shepway estate.

Manchester.—Works for Reg. Hosp. Board: Erection of maternity unit, Albert Infirmary, Winsford; accommodation for resident medical staff, North Lonsdale, Barrow-in-Furness; erection of new laundry, Royal Albert, Lancaster, £22,450 est.; provision of hostel for 40 adolescents, Mary Dandy Hospital, Great Warford; and erection of ENT operating theatre, Beaumont Hosp., Lancaster.

Mansfield.—TC approved layout plans for Ladybrook estate; also erection of further 53 houses at Brick Kiln-la. estate.—Plans also approved for proposed dwellings at Sandy-la. estate.

Mansfield.—BC propose further 40 three-bedroomed houses and 13 two-bedroomed houses at Ladybrook Estate.—BC approved plans office premises at Forest-ave., for Fletcher & Co., Ltd.

Middlesbrough.—TC to take steps to acquire land bounded by West-st., Market-pl., Dacre-st. and Stockton-st. and further land bounded by Dacre-st., North-st., Commercial-st. and Stockton-st., for housing developments.—Boro' E to prepare layout plans for development of Pallister Park.

Middlesbrough.—Garbutt, Archibald & Archibald, Albert-rd., prepared plans for 12 houses in Heythrop-dr. and Minsterley-dr., for E. T. Sweeting & Sons, builders, Back Haymore-st.—Kitching & Co., 21, Albert-rd., submitted plans to TC for proposed school and youth centre in Park-rd. South.

Newcastle-on-Tyne.—Nashs, Ltd., propose to construct motor showrooms in Chillingham-rd. Architect, M. A. McKenzie, 1, Eldon-pl.

Newton Aycliffe. — Dev. Assoc. to build community centre. Chairman of Management Com., D. Vickers, Newton Aycliffe.

Northants.—CC appointed E. Howard & Sons, 20, Derngate, Northampton, as quantity surveyors for grammar school at Corby.

Northumberland.—CC to erect library at Hexham, and sites to be considered. County A, C. C. Brown, County Hall, Newcastle-on-Tyne.

Northumberland. — EC received sanction to build school at Wallsend, cost £40,150. County A, C. C. Brown, Newcastle.

Northumberland.—EC received sanction to build two schools at Bedlington, to cost £99,000 and £40,150. Plans by County A, C. C. Brown, Newcastle.

Nottingham.—City C recommended to clear Snelnton Elements to enable provision of 16 houses and 36 flats.

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Nottingham.—Mitchells & Butler, Ltd., to erect premises at junction Derby-rd., Wollaton Vale, Lenton Abbey.—Hardys Kimberley Brewery, Ltd., to erect premises at junction of Hollington-rd. and Beechdale-rd.

Oldham. — BR propose modernisation of Mumps Station.

Peterlee.—Peterlee Dev. Assoc. to build 300 more houses.

Pool.—Hsg. Com. approved layout plan for proposed Church-la. housing estate, subject to TP Officer's approval.

Portsmouth. — Ministry approval sought for proposed old folks' home at Wymering, est. cost £33,201, for Portsmouth Welfare Services Comm.

Retford.—Layout plans for East Markham housing scheme have been prepared by A, Rowlinson.

Rothbury.—RDC to begin work shortly on erection of another 60 houses. S, J. M. Oliver.

St. Albans.—City C to build flats for single people.

Scarborough.—Boro' E, H. V. Overfield, to prepare layout plans for development of land in Wreyfield-dr.—TC seek loan sanction for £56,977 for erection of 44 houses at Eastfield.

Sheffield.—Reg. Hosp. Board appointed Cleveley & Bass, 47, Gordon-sq., London, WC1, quantity surveyors for erection of ante-natal clinic at Scarsdale Hosp. and medical block and conversion of laundry into nurses' training unit at Royal Hosp., Eastwood. Appointed Bromley and Cartwright, 111, London-rd., Derby, architects for improvements at Ransom Sanatorium.

South Shields.—Boro' E, John Reid, prepared revised plans for second children's home at Simonside.

Sowerby Bridge.—UDC propose erection of further 78 houses.

Startforth.—RDC to erect six houses in Gilmonby-la.

Stockport.—TC approved plans for health clinic at Brinnington Estate; approved layout for 71 bungalows and 2-storey flats at rear of shopping centre at Brinnington Estate; approved plans for 56 houses off Keswick-rd., for H. T. Barnes & Sons, Ltd., 23, Richmond-rd., Altrincham; seek loan £11,737 for stage 1 for propagation centre at Woodbank Park.

Stone. — UDC propose civic building to house council chamber and new office accommodation.

Sunderland.—M of E asked EC to reduce by half its plan for jun. sch. at Castleview, originally intended to accommodate 640 pupils.—EC will build next year another jun. sch. (480 pupils) at Broadway. —M of E to be asked to increase EC's authorised building programme.

Sunderland.—Stewarts (Builders), Ltd., to erect six houses in Ranson-st., to plans by G. T. Brown & Son, Fawcett-st.

Wakefield.—TC propose erection of three-storey flats at Sun-la.—Propose branch library at Lupset.

Warwickshire.—CC received starting date of July 1 for ambulance depot at Stratford-on-Avon, £13,500 est. — Proposed new residential nursery at Myton Hamlet.—New headquarters building for county fire brigade at Lillington-rd., Leamington Spa.

Warwickshire.—EC approved plans and estimates for following schools in current programme: Coleshill Cty. Gram., £120,000; Alderman Smith Cty. Sec., Nuneaton, £157,300; Wolston Cty. Sec., £97,000.—Proposed following schools in 1954-55 programme: Solihull Lyndon Cty. Sec. Girls, £135,000; Binley Roseycombe Jun. and Inf., £29,000; Sutton Coldfield Sec., £30,000; Solihull Olton County Inf., £37,750; Leamington North Precinct, £145,000; Bedworth Nicholas Chamberlain Cty. Sec., £90,000.—Extensions at Exhall Ashgreen Cty. Sec., £90,000; Keresley Newland Cty. Jun., £74,500; Coleshill Kingshurst Hall Cty. Jun., £49,500; Warwick South Precinct Cty. Sec., £90,000; Shipton-on-Stour Cty. Sec., £95,000; Rugby Westfield Cty. Inf. £38,500; Southam Cty. Sec., £115,000; Rugby RC Sec., £70,000; Solihull Light Hall Cty. Sec., £140,000; Coleshill Tile Cross Cty. Sec., £140,000; Hartshill Cty. Sec., £140,000.

Winchester. — TC to erect for Vickers-Armstrong employees: 8 flats at Compton, 32 flats at Alresford, 4 flats at Colden Common, 8 flats at Woriston, 16 flats at Owslebury and 8 flats at Itchen Abbas.

York.—City C recommended to approve erection of 24 houses at New Earswick, for Joseph Rowntree Village Trust.

TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government Departments.*

Ashton-under-Lyne.—Conversion of mortuary into pathological laboratory at General Hospital: *Edwin Marshall & Sons, Ltd., Cockbrook, Ashton-under-Lyne, £9,388.

Ayr.—50 houses at the Craigie housing site, for Corpn. Thomas O'Brien, FRIBA, architect, Municipal-bldgs., The Sandgate, High-st., Ayr: *Blackburn (Dumbarton), Ltd., Dumbarton, £79,855.

Barrow.—Eight houses at Park-rd., Ormsgill, for BC: Direct labour, £12,550.

Beverley.—Ten houses and site works at Arram, for RDC. G. Palfreyman, architect, 36, Market-pl: *T. Wright & Son (Hull), Ltd., 57, Regent-st., Hull.

Birkenhead.—Mr. T. A. Brittain, FRIBA, DipArch. Birkenhead Borough Architect, informs us that no contract has been placed for the 18 houses in Fairview-rd. (as published on page 895 of our last issue) and that tenders were not, in fact, due until yesterday, June 11. We regret the error.

Blantyre.—Works at Wheatlands housing site, for Lanarkshire CC. Samuel MacColl, ARIBA, architect, County-chbrs., Beckford-st., Hamilton West. *Murdoch MacKenzie, Ltd., Motherwell-Wishaw, £15,539.

British Railways (Eastern Region).—Contracts placed. R. Ridd & Son (Contractors), Ltd., 7, Burntwood-ave., Hornchurch, Essex: Cleaning and painting of offices, messrooms, toilets, roofs, warehouses, stores, bridges, signals, battery and telephone cupboards in King's Cross Goods Yard (Midland Shed, 10 o'clock Road and Potato Market-rd.). T. E. Cundy & Son, Ltd., 28, Belgrave-rd., c/o Abbey Park-rd., Leicester: Cleaning and painting of station buildings, awnings, roofs, warehouses, goods sheds, signal boxes, signals and line work between Carlton-on-Trent and Retford. Shirley Painting and Decorating Service, 70, Buckstock-rd., Finsbury Park, N4: Cleaning and painting of station buildings, subways, signal boxes and signals between Palace Gates and West Green. Metropolitan Vickers-GRS, Ltd., 132/135, Long Acre, WC2: Supply and installation of colour-light signalling at Potters Bar.

British Railways (Eastern Region).—Repairs to s.s. "Duke of York": Palmers Hebburn Co., Ltd., Hebburn, Co. Durham. Renewal of permanent way, Doncaster district: Tersons, Ltd., 4, Dollis Park, Church End, Finchley, N.3.

Carmarthenshire. — Additions, etc., "Robert's Rest," Ferryside, near Carmarthen, for CC: W. T. Lloyd (A), County A., Carmarthen. Quantities by W. T. Hills & Co.: *Thomas, Rees & Jones, 12, Penybryn-ave., Burry Port.

Cheadle (Staffs).—Four houses at The Wentlows Tean, for RDC: *Wilcox Bros., Ltd., £5,424.

Cheshire.—Eight police houses at Blacon, for CC: *Thos. Warrington & Sons, Ltd., Ellesmere Port, £3,875 and £7,750.

Chester-le-Street.—Pithead baths at Sacriston Colliery, for NCB. Plans by the Board's Architects' Dept., Ashfield Towers, Gosforth, Newcastle-on-Tyne: *Gordon Durham & Co., Ltd., East Boldon, Co. Durham.

Darlington.—Houses, for TC: *Boddy and Bell, Thomas-st., Darlington (34): *Teesside Builders, Ltd., Thornaby (12); *William Dickinson, 221, Parkside, Darlington (12).

Devizes.—18 houses, The Pound, Bromham, for RDC. Edwards & Webster, architects, 10, St. Mary-st., Chippenham. Quantities by W. E. Underwood & Son, 21, Gay-st., Bath, Somerset: *Goodman & Lawton, Rotherstone, Devizes, Wilts, £31,209.

Devizes.—18 houses with site works at Hillworth Park housing estate, for TC: McDonald & Ptnrs., College Green, Bristol 1, architects. R. E. Paget, AMICE, BS, The Chequers, Devizes, Wilts. Quantities by Edmondson & Sims, Clifton, Bristol 8:—

A. J. Miller & Sons, Ltd., Bristol	£24,716
W. E. Chivers & Sons, Ltd., Devizes	23,663
Goodman & Lawton, Rotherstone, Devizes	23,249
*Gaiger Bros., Northgate-st., Devizes	22,894

(Subject to approval of MH&LG.)

Dumfries-shire.—30 houses at the Greenlea housing site, at est. cost of £54,481. James J. Rodger, Council A, Master of Works Offices, Annan: *Weir Housing Corporation, Ltd., Coatbridge, Lanarkshire.

Dunstable.—42 houses on Brewers' Hill estate, for BC. R. Thurston (A), architect. Quantities by E. G. Bullock:—

Robert Marriott, Ltd., Rushden, Northants	£51,323
D. Nott & Sons, Luton	50,243
H. & H. E. Sanders & Son, Markyate, Herts	50,065
*Lindman (Lincoln), Ltd., Caulwell Walk, Kempston-rd., Bedford	49,421

Felling (Co. Durham).—130 houses at Leam-la., for UDC: *Direct labour.

Glasgow.—200 Dumbartonshire houses at the Drumchapel housing site, for the Corpn. Archibald G. Jury, FRIBA, architect, Housing Offices, Glasgow Cross, The Trongate, Glasgow: *The Athol Houses, Ltd., Glasgow, £276,157.

Glasgow.—Office buildings at Castle-st.: *Grant & Burns, Ltd., Springburn, Glasgow.

Glasgow.—Garage, extensions to offices and other additions at Pollockshaws-rd., for Wylie, Ltd. John Laird & Son, FRIBA, architects, 87, St. Vincent-st., Blythswood, Glasgow, WC2: *Angus M. MacDougall & Co., Ltd., Glasgow.

Glasgow.—Lavatories and sheds at Golfhill School, for Corpn. John MacNab, FRIBA, architect, 129, Bath-st., Blythswood, Glasgow, WC2. Concrete, brick, plaster, building and other works, Hunter & Clark, Ltd., Glasgow, £13,827.

Glasgow.—Temporary Prim. Sch. at Blyth-rd. (Site 2), Balarnock, for Corpn. John MacNab, FRIBA, architect, 129, Bath-st., Blythswood, Glasgow, WC2. Underbuilding, joinery, carpentry, plumbing, sanitary engineering and other works: *Scottish Tar Mac & Asphalting Co., Ltd., Glasgow, £16,530.

Glenrothes.—802 houses at Auchmuty, for Dev. Corpn. The Secretary, Glenrothes, Fife:—*John Best, Ltd., Kirkcaldy, brick, etc., work; *Alex B. Cant, Dunfermline, joiner, etc., work; *Ruberoid Co., Ltd., Glasgow, bituminous felt roofing; *P. Kelly & Sons, Ltd., Edinburgh, roof tiler and roughcast works; *Lindsay & Scott, Ltd., Dundee, glazier work; *W. D. Cook, Kennoway, plumber work; *P. Kelly & Sons, Ltd., Edinburgh, plaster work; *Moncrieff Bros., Leven, electrical installation.

Kendal.—Conversion of building into chest clinic at Ghyll Head, Westmorland Hospital: *A. O. Thoms, Wheatfield-st., Lancaster.

Lancaster.—Rebuilding of Baptist Church at junction of Abbey-rd. and Park-dr.: *Nicholson & Wright, Ltd., Willow-la., Lancaster, £40,000 approx.

¶London (Admiralty).—Particulars of contracts:—*Haverfordwest:* 204 houses and siteworks, Gibson & King, Ltd., Great North-rd., Milford Haven. *Bramcote, Nuneaton:* Hot-water boiler, Norris Warming Co., Ltd., Exchange-bldgs., Birmingham, 2. *Sheerness:* Reinforced concrete roof, John Mowlem & Co., Ltd., 91, Ebury Bridge-rd., London, SW1.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended June 6:—

Civil engineering: The Scottish Tarmacadam & Asphalte Co., Ltd., Glasgow, C5. *Building work:* R. G. Carter, Ltd., Norwich. *Resurfacing work:* Allweather Mechanical Grooving Co., Ltd., London, SW1. *General maintenance work:* Davidson & Co., Aberdeen. *Construction of tower:* R. Smith (Horley), Ltd., Horley, Surrey. *Electrical installation services:* Rashleigh Phipps & Co., Ltd., London, W8.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended May 30:—

Building work: Middlemiss Bros., Ltd., Newcastle-on-Tyne: M. J. Gleeson (Contractors), Ltd., Sheffield; William Sindall, Cambridge; James Miller & Partners, Ltd., Edinburgh; Wilson Lovatt & Sons, Ltd., Wolverhampton. *Overslabbing and strengthening of aircraft-movement areas:* Wm. Hamilton & Co. (Woking), Ltd., Woking, Surrey. *Painting work:* J. Preston & Sons, Ltd., Fleetwood, Lancs; M. A. Appleton (Contractors), Ltd., Wolverhampton. *Civil engineering:* William Prestwick & Sons, Ltd., Dronfield, nr. Sheffield; Robert M. Douglas (Contractors), Ltd., Erdington, Birmingham. *General maintenance work:* Robert Marriott, Ltd., Rushden, Northamptonshire; Sandy & Co., Stafford; G. T. & E. Gardner, Willington Quay, Northumberland.

London (Metropolitan Police). — Contracts let by Metropolitan Police:—

Interior repairs, replacement of sanitary fittings at Warren House, 12-20, Ironmonger-row, EC1, J. Price (King's Cross), Ltd., £1,085.

Building four houses at 18-34, The Glade, Croydon, Cobby & May, Ltd., £9,000.

Building two flats and one maisonette at 93-103, Tynmouth-rd., Mitcham, H. T. Oliver & Sons, Ltd., £5,706.

Completion of section house at Limehouse police section house, Kirk & Kirk, Ltd., £109,978.

Repairs and decorations at South-Western Magistrates' Court, Reynolds & Nicholls, Ltd., £2,057.

¶London (MoW).—Contracts placed by MoW for week ended May 30:—

Beds: HPO, Church-sq., Leighton Buzzard, adaptations, F. J. Mitchell, Ltd., 25, Wendover-rd., Aylesbury, Bucks. *Glam:* Bargoed, erection of TE (UAX), T. F. Howells, Ltd., 83, Bartlett-st., Caerphilly, Glamorgan. *Inverness-shire:* PO, Lochmaddy, North Uist, new engine and battery room, Ross & Mackenzie, 28, James-st., Stornoway. *Suffolk:* TRS, Battery Green, Lowestoft, new engine room, etc., D. Leighton & Son, Ltd., Belvedere-rd., Lowestoft, Suffolk. *Surrey:* CBAH, Veterinary Lab., New Haw, Weybridge, erection of extension, Day & Son (Builders), Ltd., 130-2, Terrace-rd., Walton-on-Thames. *Yorks:* Post Office, St. George's-gate, Doncaster, garage, storage and office accommodation, J. Dixon (Doncaster), Ltd., Greenfield-la., Balby, Doncaster; Post Office, Leeds-rd., Huddersfield, proposed engineering garage, Geo. H. Haigh & Co., 115, Long-la., Dalton, Huddersfield.

¶London (War Dept.).—Contracts placed by War Dept. for week ended May 30:—

Yorks: Hutting waterproofing, Berry Wiggins & Co., Ltd., London, E.C.4; miscellaneous, The Williamson Building & Contracting Co., Ltd., Bridlington. *Sussex:* Building work, Ringmer Buildings Works, Ltd., Ringmer. *Norfolk:* Building, Oliver Staines & Son, Swaffham. *Sussex:* Building, J. B. Edwards & Co. (Whyteleafe), Ltd., Kenley. *Essex:* Painting, T. H. Kenyon & Sons, London, W.9. *Shropshire:* Hutting waterproofing, Bitumen Industries, Ltd., Slough. *Merionethshire:* Repairs to floors, R. A. Buckle, Ltd., Prestatyn. *Pembrokeshire:* Road repairs, Constable Hart & Co., Ltd., Cardiff. *Shropshire:* Miscellaneous, H. Smith, Ludlow. *Surrey:* Miscellaneous, E. C. Hughes, Ltd., Wokingham. *Somersetshire:* Roof repairs, Roberts Bros. (Contractors), Ltd., Bridgwater. *Hampshire:* Building, A. J. Dunning & Sons (Weyhill), Ltd., Weyhill. *Devonshire:* Painting, W. T. Pickering & Sons, Ltd., Watford.

Middlesbrough.—104 houses at Park End site, for TC. J. A. Kenyon, BE: *Direct labour, £140,154.

Middlesbrough.—112 "Unity" houses at Park End, for TC. J. A. Kenyon, BE: *Unity Structures, Ltd., London, £153,602.

Middleton.—New offices, for Housing Department: *Ashton Smethurst (Builders), Ltd., Middleton.

Nethertun.—Lanarkshire CC has accepted the tender, £103,390, 2/10, 62 houses at Netherton-rd., housing site, for Lanarkshire CC. Samuel MacColl, ARIBA, architect, County-chbrs., Beckford-st., Hamilton West: *The Lanarkshire Builders, Ltd.

Northwich.—12 houses at Manor Park estate, for UDC: *W. E. Jones (Contractors), Ltd., Lewin-st., Middlewich, £13,080.

Nottingham.—46 married quarters at Bestwood Lodge, for War Dept.: *Geo. Cooper (Builders), Ltd., Nottingham.

Omagh.—Erection of 72 houses in groups on Hospital-rd., for UDC: *John Colhoun, Londonderry, £95,000.

Portsmouth. — Old people's homes at Wymering, for City C. Frank Mellor (F), City A: *Warings (Contractors), Ltd., Londop-rd., Hilsea, Portsmouth, £33,202.

Redditch.—96 houses at Batchley estate, for UDC: *C. Bryant & Son, Ltd., 65, Whitmore-rd., Smallheath, Birmingham.

Ringside.—58 houses in 18 blocks, for Lanarkshire CC. Samuel MacColl, ARIBA, architect, County-chbrs., Beckford-st., Hamilton West: *The Lanarkshire Builders, Ltd.

Scarborough. — 44 houses at Eastfield, for TC. H. V. Overfield, BE: *A. Schofield (Builders), Ltd., Hornsea, Yorkshire, £55,200.

Settle.—26 houses at Hellifield, for RDC. N. L. Jagger, AMICE, MIMunE, E&S: *H. Nicholson & Sons, 16, Tyersal-rd., Tyersal, Bradford.

Shardlow.—42 houses at Alvaston, for RDC: *Wm. Wood (Heanor), Ltd., Heanor, Notts, £55,712.

Sheffield.—40 maisonettes and flats on Manor Park estate, scheme No. 5, for City Council. City A.

W. Memmory & Sons, Ltd.	£52,581
W. G. Robson, Ltd.	52,371
W. Redmile & Sons, Ltd.	51,576
Bailey & Martyn, Ltd.	51,531
Reeves Charlesworth, Ltd.	50,654
Public Works Department	50,523
Melling Bros., Ltd.	50,425
C. L. Marcroft, Ltd.	50,227
Ackroyd & Abbott, Ltd.	50,104
H. Dernie & Sons, Ltd.	48,871
*M. J. Gleeson (Contractors), Ltd.	48,675

South Shields.—Alterations to premises at Oakleigh-gdns. to provide old people's hostel, for TC. Architects: J. H. Morton & Son, Martins Bank-chbrs., Fowler-st., South Shields: *Robson Brothers, Ltd., Dean-rd., South Shields, £7,500.

South Shields.—529 houses, four shops and flats and also the construction of roads and sewers at West Simonside, for TC. John Reid, BE: *Myton, Ltd., Hull, £759,617 15s. 2d.

Sunderland.—Reconstruction of bridge near No. 21 Coal Staith, for River Wear Commissioners, St. Thomas-st., Sunderland. R. S. Copden, Chief Engineer: *Purdie Lumsden & Co., Ltd., 25, Oxford-st., Newcastle-on-Tyne, £7,000.

Totnes.—22 houses on Pathfields estate, for BC. J. W. Smith, MIMunE, etc., BE. Quantities by C. E. Barnes, AFS(Eng):—

T. Brook & Co., Ltd., Totnes	£32,578
P. D. Cavanna, Ltd., Totnes	32,372
*E. R. Lugg, Stoke Gabriel, Totnes	32,093

Twickenham.—64 houses, Butts Farm estate, Feltham, for BC. A. S. Knolles, BSc, BE&S. Quantities by Eric G. Lynde & Ptnrs., 41, Russell-sq., London, WC1.

Matthew James & Co., Ltd., E3	£123,905
Halse & Sons, Ltd., SE18	119,402
Geo. Parker & Sons, Ltd., SE15	116,830
Lander and Houghton, Ltd., NW1	115,302
Gaze & Sons, Ltd., Kingston-on-Thames	114,886
Rice & Sons, Ltd., London, SW9	106,295
W. & E. Simmons, Ltd., Walton-on-Thames	104,300
Bunting Construction Co., Ltd., SW2	103,350
E. J. G. Morgan, Ltd., Uxbridge	102,790
Telling & Son (Bldrs.), Sunbury-on-Thames	101,700
Lewood (Ditton), Ltd., Cobham	100,217
Arthur Watson, Ltd., Highlands, Hounslow	99,600
R. G. Taylor, Ltd., Hampton	99,000

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Washington (Co. Durham).—Pithead baths at Glebe Colliery, for NCB. Plans by Architect's Dept., Ashfield Towers, Gosforth, Newcastle-on-Tyne: *George Gradon & Sons, North-rd., Durham.

Widnes.—Phase 1 of Widnes Ditchfield-rd. County School, for Lancs EC: *Morley & Sons, Hall-la., Huyton Quarry, £37,550 revised tender.

Winchester.—28 houses at South-rd., Alresford, for RDC: *C.P.C., Ltd., £37,201.

Worcester.—Six shops and 6 maisonettes at Newtown No. 2, for City Council: *Dolton Bros., Ltd., £21,753.

NEW COMPANIES

THE FOLLOWING NEW COMPANIES, registered in England, have been announced by Jordan and Sons, Ltd., company registration agents.

Bailey & Goates, Ltd. (519914.) Regd. May 21, 48, Cross-st., Sudbury, Suffolk, bldrs., decorators, contractors and sanitary engrs. Nom. cap.: £5,000. Dirs.: F. A. and Mrs. E. I. Hadley, Blendon, Belle Vue-rd., Sudbury, Suffolk.

Broadbent's (Leicester), Ltd. (519918.) Regd. May 21, The Spa, 36, Humberstone-rd., Leicester, roofing contractors, slaters, tilers. Nom. cap.: £20,000. Dirs.: J. R. M. and Mrs. S. Y. Broadbent, The Grange, Knighton, Leicester.

E. J. Weatherley, Ltd. (519920.) Regd. May 21, bldrs., contractors and decorators, etc. Nom. cap.: £100. Dirs.: E. J. and Mrs. M. Weatherley, The Gables, Meadway, Ruislip, Middx.

Frank Jones (Bromborough), Ltd. (519922.) Regd. May 21, 230, Martins Bank-bldg., Water-st., Liverpool, bldrs. and contractors, etc. Nom. cap.: £1,000. Dir.: J. N. M. Entwistle, Burwood, Formby, nr. Liverpool.

James Milward & Sons, Ltd. (519924.) Regd. May 21, bldrs., contractors and decorators, etc. Nom. cap.: £10,000. Dir.: Mary J. Milward, 30, Market-pl., Belper, Derby.

Tenniswood & Dawe, Ltd. (519944.) Regd. May 21, 14b, Bridge-st., Walton-on-Thames, bldrs. and contractors, etc. Nom. cap.: £1,000. Dir.: C. A. Tenniswood, 91, The Avenue, Sunbury-on-Thames.

Lincoln Slating & Tiling Co., Ltd. (519939.) Regd. May 21, Woodstock-st., Lincoln. Nom. cap.: £2,000. Dirs.: A. J. and Mrs. S. M. Taylor, 80, Hewson-rd., Lincoln.

Ralph & Co. (Decorators), Ltd. (519942.) Regd. May 21, 36, Oxford-st., W1. Nom. cap.: £100 in £1 shares. Dirs.: R. Teiman, 2a, Exeter-rd., Willesden, NW2.

Bamford & Ellis, Ltd. (519954.) Regd. May 22, bldrs., etc. Nom. cap.: £1,000. Dir.: W. F. Knowles Ellis, "Loretta," Moss House-rd., Marton, Blackpool.

Fairhead Builders, Ltd. (519966.) Regd. May 22, bldr. and carpenter. Nom. cap.: £2,000. Dir.: C. R. E. Matthews, Finchley, Marine-parade, Gorleston, Suffolk.

H. F. Fox & Co. (Contractors), Ltd. (519974.) Regd. May 22, bldg. contractors, etc. Nom. cap.: £5,000. Dir.: J. Fox, 22, Wynwood-ave., Blackpool.

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